

Commodore
UPDATE

Australian Commodore &

AMIGA

For Professional and Home Users

Reviews



Scenery Animator 4

Reviewed

**Warranties - your rights • Plants in Dpaint
Internet • Montage • Getting Broadcast**

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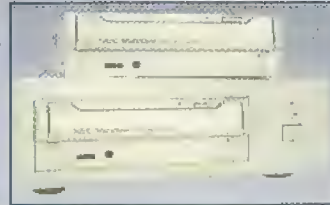
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Amiga 1200

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Transportable SCSI drive with 35MB to 150MB removable media.	
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A2091 2Mb	\$199
GVP Impact 2000 2Mb	\$199
A3000 4Mb ZIPs	\$399
A4000 1Mb SIMM	\$149
A4000 4Mb SIMM	\$349

Audio

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Sunrise AD1012 12 bit DSP Card	\$950
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Accelerators

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GVP A1230 II 40MHz 030 SCSI 1Mb	\$999
GVP A1230 II other configs	\$Call
GVP G-FORCE Accel 40/40/4	\$1199
GVP 040 A2000 33MHz 4Mb RAM	\$1995
A2620 Accel 2Mb Ex-Demo	\$399
A2620 Accel 4Mb Ex-Demo	\$599
A2630 Accel 2Mb Ex-Demo	\$699
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G-Force 25MHz Ex-Demo	\$799

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Amiga 2000	\$449
Amiga 2000 Ex-Demo	\$349
Amiga 4000 68030 CPU 4Mb 120HD	\$Call
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Emulators

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XT Bridgeboard Ex-Demo	\$100
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Commodore 386SX	\$999
Golden Gate 386SX Bridgeboard	\$995
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Additional 40Mb HD for A1200	\$249
260Mb Seagate IDE HD for A4000	\$499

450Mb Seagate IDE HD for A4000	\$799
525Mb Seagate IDE HD for A4000	\$999
52Mb Quantum SCSI HD	\$299
120Mb Quantum SCSI HD	\$399
170Mb Quantum SCSI HD	\$449
240Mb Quantum SCSI-2 HD	\$499
270Mb Quantum FAST SCSI-2	\$549
340Mb Quantum FAST SCSI-2	\$649
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525Mb Maxtor MXT FAST SCSI-2	\$1899
1.2Gb Maxtor MXT FAST SCSI-2	\$2599

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88Mb C Removable w/Cartr	\$799
105Mb SCSI-2 Removable w/Cartr	\$699
Syquest 250Mb Tape Cartridge	\$79
44 Mb Syquest Cartridge	\$149
88Mb Syquest Cartridge	\$189
105Mb Syquest Cartridge	\$125

Bernoulli 150Mb Insider w/Cartr	\$1350
Bernoulli 150Mb Transport w/Cartr	\$1550
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GVP Impact 500 HD 80Q	\$749
GVP Impact 500 HD 120Q	\$949
GVP Impact 2000 HCB No Drive	\$349
GVP Impact 2000 52Q	\$599
GVP Impact 2000 120Q	\$749
GVP Impact 2000 240Q	\$949
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Commodore 1940 Bsync Monitor	\$499

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512K for A500	\$59
A601 1Mb RAM for A600	\$135
AdRam 4Mb for A500 OK	\$175
ChipEx 2Mb CHIP RAM with Agnus	\$299
MBX1200 RAM Card 68881 OK	\$275
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RAM Chips

1Mb x 8 SIMM Ram (GVP)	\$100
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Anim Workshop	\$99
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Art Department: Pro v2.5	\$275
Art Expressions	\$275
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Professional Page V4.1	\$149
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For the Amiga 1200.

This combo board offers the option of either 40 or 50MHz 68030 processor, optional FPU, space for up to 32Mb 60ns 32-bit RAM and SCSI controller.

A1230 Series II with 40MHz, 1MbRam \$799

Call for price on 50MHz, SCSI, more RAM, FPU, etc.



GVP TBC Plus

Time Based Corrector/24-bit Frame Grabber
Professional Composite & Y/C video SFX generator with real time 16.7m colour frame-grabber, SFX generator, with or without SMPTE. Call for full details & Specs

With SMPTE \$Call

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An 040 card for the Amiga 4000 with SCSI-2 and RAM option

GVP A4000 SCSI +

A4000 SCSI card with space for up to 8Mb RAM - \$349

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Just In - 24bit video all-in-one.

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CD 32 Titles
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Scala Multimedia MM300	\$549
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Video Director Amiga	\$199
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CD ROM Software

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CDDemo Vol 1	\$69
CDDemo Vol 2	\$69
CDPD Vol 1	\$69
CDPD Vol 2	\$69
CDPD Vol 3	\$69
Fred Fish	\$69
Fred Fish On-Line	\$75
NASA	\$59
Prey	\$89
17BIT Collection	\$99
17bit Continuation	\$59
SIMCITY	\$69
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68882 Maths Co-pr for A4000/030	\$299
2.04/2.05 Kickstart ROM	\$69
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3-way Internal SCSI Cable	\$35
PARNET Cable	\$35
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Mice & Accessories

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Electronic Design Y/C Genlock	\$799
GVP Impact Vision + Splitter	\$2499
GVP EGS Spectrum 2Mb	\$995
GVP GLock Genlock Only	\$699
GVP GLock VGA	\$2149
GVP TBC+ No SMPTE	\$1649
GVP TBC+ SMPTE	\$Call
Neriki Genlock	\$1199
Opalvision 24-bit Display Card	\$995
Vidi12	\$289
Vidi24 RT	\$699
VLAB Y/C Framegrabber	\$699
VLAB External for A1200	\$550

Printers

HP DeskJet Portable	\$499
HP 500 B&W DeskJet	\$699
HP 500C Colour DeskJet	\$899
HP 550C Colour DeskJet	\$1199
HP 4L Laser	\$1499
Star SJ-144 Heat Fusion Colour	\$1499

Modems

Interlink VOIDAX II Data/Fax/Voice	\$649
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Maestro 14,400 Data Fax Modem	\$599

Miscellaneous

A1200 dual HD cable	\$49
High Density Floppy Drive External	\$299
High Density Floppy Drive Internal	\$249
GVP ID Extender	\$299

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Kickstart 2.04/2.05 ROM	\$69
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Quicknet Ethernet Card	\$475
Rocite External Floppy Drive	\$165

Ex - Demo

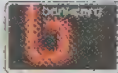
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GVP Impact 500 HD 52Q	\$599
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68030 Accelerators - call for details	

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LM ACAR64

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EGS 28/24

SPECTRUM



The EGS SPECTRUM from GVP fully supports the Display Database starting with Kickstart 2.04. Any programs that open screens from this list will run on the EGS-28/24 SPECTRUM, including Workbench!

Even programs that do not support the Display Database, but do use standard workbench-type screens will also run on the EGS-28/24 SPECTRUM in high-resolution colour.

The high-performance Paint package has abilities and features not found in other paint software, including Pantograph painting, turbo airbrush, and Real-Time 16-million colour painting tools.

The window-based architecture allows multiple images to be opened at once on high-resolution screens (up to 1600x1280) for editing, compositing, and manipulating. This makes life easier than ever before, and is unavailable on competitive products.

The EGS libraries make it easy to develop professional-looking, high resolution, true colour applications that are portable, reliable, and productive.

Years of R&D have gone into these libraries and they offer a very real and very flexible Retargetable Graphics Operating System for the Amiga platform.

PLUS the EGS Amiga Pass-Through allows native displays to reach the monitor under software control. This feature eliminates the need for two monitors without sacrificing features.

Choose your A1200 System



Choose the system that most suits you, and if you want something special ... you know what to do.

A1200 40Mb HD	\$995
A1200 80Mb HD	\$1199
A1200 larger HDs	\$CALL

Sigmacom A1200 Office Pack -

For your small office or home business solution. Amiga 1200 40Mb HD - bundled with Final Writer word processor, Pro Calc V2 **\$1399**

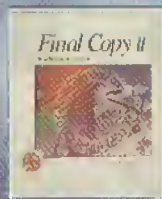
Sigmacom A1200 Desktop Video Pack -

For the video enthusiasts on a budget who want serious control and an excuse for creative licence. Amiga 1200 40Mb HD, 6Mb RAM, plus - Scala MM211, GVP G-Lock Genlock **\$2499**

Top Shelf Software



Brilliance
Full featured Paint Package offering best 2D animation **\$279**



Final Copy II
Power WP • Scalable Fonts • On-screen Drawing • **\$139**



GigaMem
Virtual Memory driver now supports 030 with MMU & 040. **\$175**



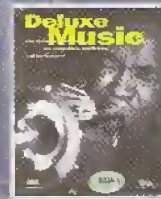
ImageFX
Image processing with built in Virtual RAM & PhotoCD support **\$449**



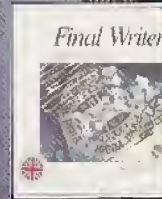
Bars & Pipes
The very best MIDI/Sequencer software there is **\$399**



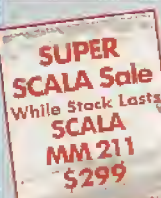
CineMorph
Static / Full Motion Morphing, animation in 24bit and 8bit. **\$99**



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Save - based music composition and playback **\$239**



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Performance WP • 120 PS fonts • extensive features. **\$219**



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Echo control VCR & Camera for direct editing from Script. In stock Now!



Vidi Amiga 12
Digitising hdw & sw for real time composite & S-Video capture. **\$269**



Vidi24 RT
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Fractal Landscape generating software at its best. **\$99**



Real3D V2
Simply the best 3D on any platform anywhere near this price. **\$699**



Montage
At last full 24bit titling with direct AGA24bit card support. **\$499**



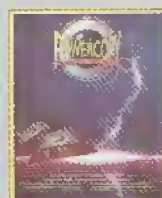
AdPro Version 2.5
Massive improvements, multiple screens, tools boxes. **\$275**



Deluxe Paint AGA
AGA version • Full 24 bit painting. #1 Paint Software. **\$150**



Directory OPUS
HD & Floppy Interface. Customise functions & buttons. **\$109**



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This Ad was created entirely, concept to film, on Pro Page 4.1. **\$149**



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Spreadsheet power & function + 123 Wk file compatible. **\$229**

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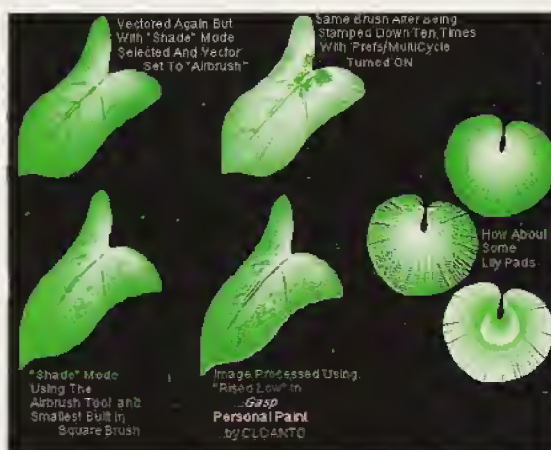
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Microcosm, Fly Harder



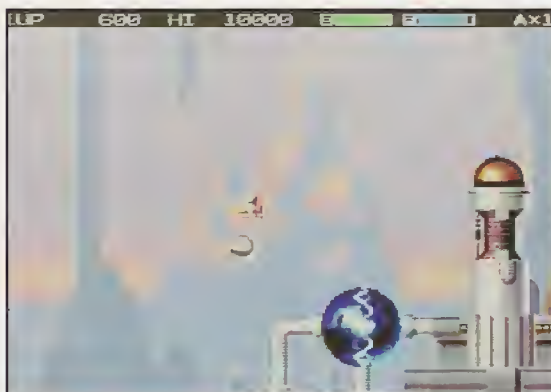
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Dpaint tutorial



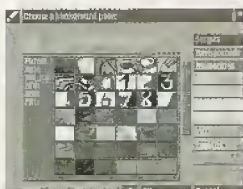
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Fly Harder

AMIGA Review

SCALA

The Multimedia Revolution



The file Requester Shuffler provides a fast visual overview of a directory.

EX Scala EX

A revolutionary new plug and play system for the integration of LaserDisc, Still Video, MIDI, or CDTV sound in your Scala presentation.

NEW: IV-24, G-Lock, Link, Canon ION Still Video, MIDI 2.0, CDTV 2.0, and other EX's included.

Scala Wipes

More than 80 amazing, smooth and professional transitions provide possibilities previously unseen on the Amiga.

NEW: Many new wipes including Dissolve, Rolldex, Cccut, FadeToWhite, Nuclear, Ants, FlipOver etc.

Scala Sound

Enhance your presentations with voice-over, music and special sound effects! Scala offers total control of recording and play-back.

NEW: Play sound samples direct from hard disk.

Scala Shuffler

Instant viewing of your whole presentation. You can see up to 112 pages at one time. Simply shuffle them around with the mouse!

NEW: File Requester Shuffler for easy preview of pictures, animations and brush files.

Scala Buttons

Creating interactive hotspots has never been so easy! Scala MM300 even includes full support of variables.

NEW: Add sounds to buttons and automatic button creation for screen objects.

Scala LINGUA

The multimedia language Lingua with its close link to ARexx puts the advanced user in total control!

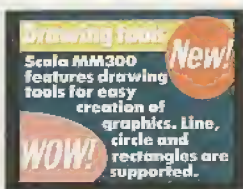
And much much more. Upgrades from MM200 available NOW! Please Call!

Scala Echo

With the optional Scala Echo your Scala MM300 system becomes a powerful DTV solution. Scala Echo enables you to easily edit your videos with your personal computer. Add high quality titles, graphics and sound to your videos. Scala Echo consists of a sophisticated cable unit which connects to the computer's serial port. One cable has a LANC/Control-L minijack which connects to the source deck, and the other has an infrared sensor which exchanges signals with the VCR. The recording is done in OnePass, retaining quality and saving time. Includes over 150 symbols to personalise your videos.



Brushes can be cropped and resized freely.



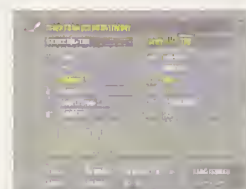
The Edit Menu now includes tools for structured drawing.



With the optional Echo EE100 IR/LANC interface you have freedom to add titles and captions to your video creations.



The new Absolute Timing is extremely useful when working with video and music.



Use the Echo EE100 IR trainer to teach the software how to control your VCR and other IR controlled devices (i.e. CD Players, LaserDiscs, Amplifiers etc.)



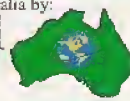
Many exciting new wipes are included in MM300 and can be applied to pages, text and brushes.



Echo EE100's LANC controller gives you complete control of a source video from within MM300.

Distributed in Australia by:

Peripheral World



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Phone (03) 725 3233 Fax (03) 725 6766

Commodore Asia Pacific Up and Running

Commodore Business Machines, the Australian company which has distributed Commodore products in Australia since the early eighties, has gone into liquidation.

The misfortunes of the Amiga are not limited to Australia. The parent company in the United States has had its own problems since early last year. Some had predicted a takeover was likely, or that Commodore would not survive at all.

None of that has happened. Indeed, in the UK Commodore has remained strong. CD32 is being aggressively marketed there, with recent figures showing their console as the biggest selling CD based machine - slightly in front of Sega and a good 50% in front of multimedia PCs. Another source quoted total sales of CD32 at 320,000 units - but sadly the Full Motion Video add on seems to have been long delayed by the lack of CD Video titles.

A spin off from CD32's popularity has been rocketing demand for the Amiga 1200, so much so that Commodore's factory in the Philippines has had difficulty keeping up. In the US, the A1200 is in very short supply, with one dealer reporting the

only way to get stock was from Canada.

Despite its successes, Commodore's problems are far from over. New graphics technology and a new range of machines are expected from it in early '95. The specifications look promising; however falling Apple Macintosh and PC prices, coupled with the launch at PC '94 last week of the PowerPC, may see some very tough competition - even in the Amiga's traditional niche markets.

The local situation is somewhat confusing. When I asked Mr Pat Byrne, Managing Director of Commodore Business Machines, whether Commodore Asia Pacific would take over distribution here, he said, "Commodore International will maintain a presence in Australia."

At the time, Amiga dealers were saying Commodore Asia Pacific representatives had reassured them they would soon be shipping product. As it turns out, Mr Pat Byrne is President of Commodore Asia Pacific, and a number of the staff from Commodore Business Machines are now working there.

Indeed it now appears that the new Commodore Asia Pacific is

definitely up and running. The new operation is at present but a fraction of the size of Commodore Business Machines of one year ago. They are now sharing offices with Hotpoint, a company which imports software for the Amiga. Spare parts and warranty are now looked after by a separate company called Compu-Aid.

And what of World of Commodore, the exhibition which last year attracted some 25,000 Amiga owners over three days? According to Howard Needleman, of Commodore Business Machines' public relations company The Others, the show was definitely on. He told me the dates had been set and the venue secured.

There are rumours that a different organisation may take on the opportunity to hold an Amiga event. I wish them every success, as despite the recent roller-coaster ride of Amiga fortunes, the machine continues to enjoy a strong following thanks to excellent third party products which out-perform equivalents available for other types of computers.

ANDREW FARRELL

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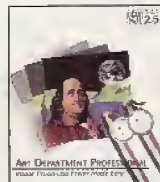
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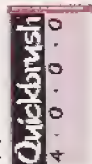
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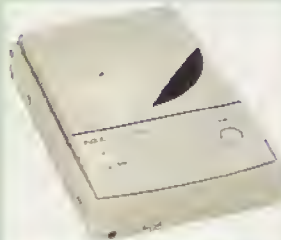


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Media Watch

Amigas are still popping up in the media, and at work in interesting places. Media Watch is responsible for more letters than any other section in an Amiga review!

Wonder World

Rhys Allen of Maryborough, Vic, and Marc Chesworth of Beechboro, WA, both spotted five A1200s on the Wonder World kids' program, during a segment on a place called "Future School". Kids who'd missed out on regular education because of sickness or disabilities were using the 1200s to improve hand-eye coordination and the learning environment in general.

We'll reserve judgement on what our erudite and sophisticated readers are doing watching kiddy TV - we should be thankful that we've not had any mentions of the Amiga graphics on Play School lately.

English At Work

Another double sighting, this time from Jack Williams of NSW and David Judd of Kingsgrove, NSW. On the SBS program English at Work, there was a shot of the window of a Computer Spot store with an A500 Starter Pack on sale for \$869. Unfortunately, Computer Spot's now gone the way of the dodo - but the Amiga's still very much alive!

Bubblejet Ads

The indefatigable Monte Boyd is back again, this time with a spotting from the new Canon bubblejet advertisements. Canon's advertising isn't working on Monte, because he only has eyes for the A1200 which appears when

somebody's printing something out - you'd be able to read the AMIGA on the casing if it weren't for a strategically held printout!

OK Monte, you've worn us down. This time you DO get a free subscription! (But keep sending the spottings!)

Cyclone Images

Trent Yarwood of Pebble Beach, Qld, noticed an Amiga in a Brisbane Seven Nightly News story on cyclones, particularly America's Hurricane Andrew. There was a computer displaying a meteorological map of Australia, featuring Tropical Cyclone Theo off the North Queensland coast. The monitor was a 1084, and it was perched on an A4000/040.

Various Spottings

Stuart Brightwell of Ararat, Vic, spotted six Amigas, and five of them nobody'd sent in before! SBS's German comedy "Go Trabi Go" had a computer geek boring the hell out of an attractive girl by showing off with his 1.3 A2000. Another SBS program, which Stuart (conveniently?) could not recall the name of, featured an A3000 in the background of an office, and the protagonist's son playing BattleChess on his A500.

An old Urban Dance Squad film clip has various shots of someone using an old version of Professional Page on an A2000.

The ABC's Sunday Arts program was discussing computer art and showed a short film called "Down the line" which was obviously made with SCALA and DPaint.

□

GVP A4098 Scrapped

GVP, the maker of many hugely successful extras for Amigas, has discontinued development of their A4098 board.

This A4000 expansion was to provide up to 256Mb of RAM and a SCSI-II FAST DMA interface, but it proved impossible to make it work properly with all, or even a majority of, 4000s.

The reason quoted by GVP is that the A4000/040 machines have "significant technical problems ... in the manner that they handle RAM ac-

cess through the Zorro-III bus."

The GVP release went on to say that "various versions of Buster chips, Ramsey chips, DMAC chips and U209 PALs on the '040 daughterboard all play a role in the likely success or failure" of the board.

It's been said before, and we'll say it again; the A4000/040's not all it could be. In fact, with the growing number of third party accelerators and graphics cards, an optioned A2000 is looking better every month. □

New A1200 Training Video

Wall Street Video have released the second instalment in their "Introduction to the Amiga 1200" series. This one, subtitled "A Deeper Look", covers things like using preferences, setting up printers, directory structure, backups, customising Workbench, basic Shell use, CrossDOS, basic application

use, commodities, the RAM Disk and more.

The first A1200 tutorial video enjoyed considerable success; this one provides a more in-depth look at using the mighty midget Amiga. Contact Wall Street Video on (02) 411 2108 for more information. □

NEWS WANTED

Here at Amiga Review we have in the past sourced much of our news from overseas sources. By working more closely with local resellers and distributors, as well as creating a line of communication di-

rectly with publishers of Amiga products we have been able to vastly improve the quality of our news. However, we would like to see more people in the industry supplying press information. Fax releases to (02) 816 4714. □

Speedy Bridge-board

Fonhof Computer Supplies are stocking the new Golden-Gate 486SLC2 Bridgeboard, for A4000, A3000 and A2000 computers. The board is based on the Cyrix 50MHz 80486, a clone of the Intel DX-2, which runs at 50MHz internally and 25MHz external. Norton SI 4.5 reports a speed rating of 85.

The older 486SLC version, without the internal clock doubling, gets a rating of 43.

Both of the SLC bridgeboards come with the new version of the emulator software, 1.31.27, which includes the new FAST OPTION.

The board has 2.5Mb of RAM standard, which is expandable to 16Mb, and 4Mb of this RAM can be used by the Amiga as fast RAM as well.

It sells for \$1799. Contact Fonhof on (02) 639 7718 for more information. □

Stop Press

Comprepair have announced that they're Australian distributors for Golden Image and DKB products. Golden Image make Amiga mice, scanners, and other peripherals, and DKB make internal hardware for the Amiga range. Comprepair can be contacted on (03) 26 0133. □

Commodore Update

● Commodore Business Machines was rumoured to have stock of Full Motion Video modules for CD32 just prior to going into liquidation.

Right now the fate of those first cartridges is unknown, however Dick Smith is supposed to have stock. Licensing agreements for Video CD titles remains a stumbling block, although at PC '94 one exhibitor claimed to be distributing a range - some of which we should see in Amiga dealers soon.

● The phone number for Commodore Asia Pacific is (02) 680 3288.

● Specifications on graphics cards expected from numerous third party suppliers will soon exceed Commodore's new 24-bit AAA graphics technology.

● Despite talk that Motorola have scrapped the 68060 processor, Commodore engineers continue to refer to next generation Amiga machines as being '060 based - with the option of a RISC (probably HP) processor.

● PC '94, Australia's most important computer show - this year the international launch pad for PowerPC, was totally devoid of Amigas!

● For the latest information on Amiga happenings, check out Mainly Amiga, every Tuesday in the Melbourne Age by Andrew Farrell.

New Look AdPro 2.5

In what the company terms "the most significant upgrade in its history", ASDG's *Art Department Professional* (ADPro) now offers unmatched improved display board support, over 100 pre-written ARexx programs, direct support for the Fargo Primera dye sublimation printer, new file formats and operators, and an entirely new look and feel which dramatically boosts ease-of-use.

You now have a choice of several completely style guide compliant user interfaces. According to company president, Mr. Perry Kivolowitz, "A new and thoroughly modern user interface was our most requested improvement. We surveyed our customers and found that some preferred a list oriented graphical user interface (GUI) for speed,

while others preferred a button oriented GUI for ease-of-use. We implemented both and allowed them to be intermixed configurably."

New File Formats

The result, is an easier-to-use ADPro in which no major feature is more than a mouse click away. Users are saying the new interface is also faster.

ADPro's GUI now runs on many third party display boards, such as the Picasso, using RTG (ReTargetable Graphics) technology. ADPro can now render images in a window on the same screen as its user interface.

Other newly supported third party hardware includes: DPS PAR, EGS, Retina Z-III and Retina.

Image format support now includes six new file formats in ADPro and three new formats in the optional *Professional Conversion Pack*. ASDG has added support for Commodore's CDXL animation format, Digital Broadcaster JStream files, FLC and FLI animations, ICO files and direct reading and writing of Workbench icons.

The conversion pack has grown to support files in the SGI, Alias, and Wavefront (both the RLA and RLB varieties) formats. Owners of the Conversion Pack should note that, as in the past, their modules will be upgraded as part of the ADPro upgrade.

Fargo Support

ADPro 2.5 directly supports the revolutionary Fargo Primera printer in its dye sublimation mode including the ability to print huge posters. ADPro 2.5 includes more than 100 pre-written ARexx programs, many of which are interactively customisable by the user.

Used in conjunction with the latest version of FRED, these ARexx programs can be combined in an infinite number of ways, producing a huge array of full motion special effects automatically. And, ADPro now allows users to define their own ARexx programs which can be incorporated directly into ADPro's configurable user interface.

Many other improvements or additions have been made to ADPro such as the ability to perform alpha channel blending with nearly every file format, not just those that support their own alpha



channel.

Composites can now be performed over a range of colours permitting more flexible chroma keying. New operators include Histogram Equalization and a brush-based Pattern operator. A new program called *CineMorph* is included which converts streams of images between 24 frame per second film style and 60 field per second video style time bases.

Better Documentation

ADPro 2.5 also sports greatly improved documentation. ADPro's manual now includes 9 tutorials, many more pictures and diagrams, and an expanded ARexx programming section. The manual has also been reorganized (and its index expanded) based upon customer feedback making it easier to use and more helpful.

Upgrades

ADPro 2.5's price will remain the same. Existing owners can upgrade directly for \$45 plus shipping and can, for the first time, upgrade via telephone using Visa, MasterCard, or AmericanExpress. For more information, please contact Ms. Gina Cerniglia at ASDG Incorporated, 925 Stewart Street, Madison, WI 53713 or call (608) 273 6585. Check with your local dealer for pricing and availability or call Desktop Utilities on (06) 239 6658.



The new version offers improved speed, a more flexible interface, more file formats and better Workbench integration.

RTG Personal Paint V4.0

At \$99, *Personal Paint* is certainly the most affordable AGA paint program on the Amiga. The latest update supports Retargetable Graphics (Picasso, Retina etc.), professional 24-bit printing (Colour and Black & White), conversion of IFF24, PCX24, HAM & HAM8 to 256 colors, loading of files through Amiga DataTypes (JPEG, BMP etc.) and a selection of third-party utilities, including colour fonts, new DeskJet printer

drivers (up to four inks) and JPEG DataType.

State of the art color quantization and reduction algorithms have been employed to load 24-bit images and transform them into 256-colour images.

The quality of the resulting 256-colour images is not easily distinguishable from a 24-bit display.

Personal Paint now features 24-bit printing (16

million colours), which overcomes the traditional limitation of 4096 colours and 16 grey shades of the Amiga printer device. (*Personal Paint's* PostScript mode has always been 24-bit.) The new modes are activated by the "24-bit Colour" and "8-bit

Grey" settings in the Shade cycle gadget.

For more information contact the Pacific Rim distributor, Amadeus Computers on 02 652-2712 or Fax 02 652-1515.

BELOW: A 16 colour image composited in *Personal Paint*.



X-Calibur 33Mhz 040 A4000 Accelerator

X-Calibur is a piggyback board for the A4000/040 board. It has space for 128 K of RAM on board so the 25Mhz version can speed up A4000 memory access by up to 400%. Overall 80% speed increase and 10-20% disk access improvement. More with a 33Mhz version. X-Calibur uses Std 72pin SIMMs. Compatible with Opalvision, Emplant & other Amiga add-on devices

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Letters TO THE EDITOR

A1200 Upgrading

I'm thinking of upgrading my Amiga 600 to an A1200, but I have a few questions to ask before I jump in. First, is it worth it? I've worked out the cost of setting up an A1200 system as being \$2147. This includes an A1200 with 40Mb hard drive (\$1049), 4Mb RAM expansion (\$599) and 1940 monitor (\$499); for this total cost a 486 PC looks comparable.

Also, I'd like to know if Commodore have any future plans to release any new Amigas. I'm asking this because I was once bitten by Commodore; a few months after I bought the A600 the A1200 came out.

In addition, can you tell me if using a 1200 with its 68020 processor will speed up my printing from Wordworth 2.0. At the moment my dot matrix takes 2.5 minutes to print a page at 180x180, but if I try to print at 360x360 it takes nine minutes to finish.

Trent Johnston
Wagga Wagga, NSW

Ed: Indeed, getting a new 1200 with a few expansions is a pretty big outlay, but you needn't pay quite as much as you listed - buying a lot of stuff at once is a great way to get a discount.

In bang for buck terms, PCs are better value. Bigger numbers for the same price. But you lose out in other respects. For example, at this moment we're try-

ing to make the latest version of the rather impressive IBM game DOOM work properly on our mighty Dell 486 (a \$3000 IBM isn't a half bad games machine!). The old Microsoft mouse driver went berserk after a few seconds of play, so we downloaded a newer one and set up the files. It worked fine under DOS and DOOM but hopped uselessly all over the place under Windows. With our considerable technical knowledge we only had to curse for about a quarter of an hour before we got a different version working, but you get the point.

If you like the idea of doing this sort of thing all the time, get a PC.

Commodore are planning to release the new AAA chipset machines towards the end of this year (all together now - yeah, right), but the 1200 will not end up the orphan the 600 did. As you no doubt know, expanding a 600 is close to impossible, with no accelerators, big RAM expansions or other nifty stuff available. The 1200, on the other hand, can take an 030 and SCSI interface with scads of RAM, provided you've got the cash.

The faster 1200 will make your printing much quicker. The delay is caused by your computer shuffling all the data around into a format the poor dumb dot matrix can understand; the faster the computer, the sooner it happens. A 1200 with fast RAM will make the process roughly five times quicker.

Coprocessor Questions

I've just purchased an Amiga 1200, and was very interested to read the "How Quick Is Fast?" article in the February ACAR. I was particularly interested in the speed comparisons with the presence of an FPU, as I'm contemplating buying a memory card with a 68881 as an option.

I have two main questions about your article. Firstly, as I believe your tests were performed with a 68882 coprocessor, how does the humble 68881 perform in comparison? Secondly, how many real world applications are substantially speeded up by a FPU? Is *Deluxe Paint* brush morphing faster? Do all rendering/graphics packages make use of the FPU? Does the software need to be specially compiled?

Jamie Watson
Latham, ACT

Ed: Our tests were indeed done with a 68882, which is about 1.4 times faster than a 68881 running at the same clock rate. Otherwise the two behave exactly the same; if code's written for a 68881 it works fine on a 68882 and vice versa.

Deluxe Paint does not address a coprocessor - it won't be any faster. A program does indeed need to have specially built code for a coprocessor to do anything, and there are two ways that programmers go about this.

One is to supply multiple versions of a program, one for 68000 users, one for 020s and 030s with no coprocessor, one for fast machines with coprocessors, and maybe even another one for people with 68040s. You install the one that matches your machine.

The other strategy is to put all the relevant code into one program, with automatic or manual selection of the version to use. This is simpler, but takes up more room because you have to install a lot of code that you'll never use.

All 3D rendering software - *Real 3D*, *Imagine et al* - takes advantage of a coprocessor. So do a lot of other high powered packages like *Art Department Professional*. If you want to use these packages, a coprocessor's worth it. Otherwise, don't bother.

Assorted Problems

I was about to buy a Kickstart 1.3/2.0 ROM sharer for my WB1.3 A2000, but then a friend mentioned waiting for version 3, supposedly fully compatible with 2.x. A sales assistant later informed me that it was AGA only and therefore useless to me. Who's right?

On a lighter note, I've got a copy of the elderly arcade-puzzler *Impossible Mission II*. What do you do after getting all the codes and music segments?

Back to the technical stuff. Have you ever published a pin-out for an Amiga to C64 comms cable (and perhaps a small C64 comms program), or a circuit diagram for a four player joystick adapter?

Steve Hett
Camira, Qld

Ed: *The shop assistant was half right. Workbench 3, as it stands, doesn't work on anything but an AGA machine. However, Workbench 3.1 will be coming along any time now (translation: we've been waiting for rather a while ...) and that will work on machines with the standard v2 ROM, just like the one you're considering getting.*

However, the differences between WB3 and WB2 aren't that noticeable, if you don't have the AGA chipset in there too. Our advice? Don't worry about it - get the WB2 ROM and WB2.1.

Impossible Mission II - that takes us back! After getting all the segments, go to the inter-Tower tunnel with the sort of, well, piggy pink thing in the middle, and press the stick up. Normally this kills you, but when you've got all the music it takes you to the final stage!

The C64 in standard trim doesn't have a serial port. What you have to buy is an RS232 serial adaptor for the cartridge port, which gives you a standard (low speed) serial connector that will work with a regular null modem cable for 64-Amiga transfers. And we've never published a four player adaptor. Hey, we can't help you with EVERYTHING!

Commodore Concern

I'm writing this in the hope of getting a straight answer from someone. Are you able to say what's happening with the Amiga in Australia? As one who has built his business around the abilities of the Amiga I am, to say the least, very concerned. I've been eagerly waiting for *PageStream 3*; for the short jobs I want to concentrate on the Amiga and *PageStream* are streets ahead of my Interleaf MS-DOS powerhouse.

Before Commodore Australia's demise I tried to get a possible delivery date for a 4000 Tower. The response was: "order your machine from one of our resellers and they'll order it from us and we'll order it from the US." No wonder they went down the chute!

John Adams
Duffy, ACT

With the demise of Commodore Australia, the future of Amiga-ing in Australia seems threatened. I'm sure ALL your readers would like to know what the hell is going on. Could you investigate it and advise via your magazine as soon as possible? I'm waiting to buy a 1200, but can't now because there's no warranty.

Bruce Richardson
Balga, WA

Ed: *We at ACAR are dedicated to keeping Amiga users up to date with the events surrounding Commodore Australia's liquidation and Commodore Asia-Pacific's rise. You sent us your letter just before the March issue hit the streets with some data about the situation - check out the editorial this issue for more information!*

A footnote - it seems everyone who wrote to us about the death of Commodore used the word "demise" at least once. Just a bit of trivia.

Whinge, whinge...

I recently bought a 1200 with a 120Mb HD and clock second hand for \$1200. Since then, I've had the hours of enjoyment I knew the Amiga would give me.

OK, I've done the suck job on the machine, now I want to get stuck into the people in the Australian industry who tick me off.

1) Through an independent store I ordered a 50MHz MBX1230 with a 68882, and waited while an interstate "distributor" used my money and failed to deliver.

2) While waiting, I see my friendly independent store receive absolutely nothing from Commodore while places like Brashs and Myer get bulk stock of products they know nothing about. No wonder the independents go under - they have to tell customers "It's still on order" and watch them go elsewhere.

My favourite store has a dozen CD32 titles but no machine to play them on! For crying out loud, Commodore - it's nice to see you out there trying to ram your product down the throats of Australian consumers!

3) Software pricing. In the October 1993 issue you claimed that shipping is a major contributor to high software prices; I think that's hogwash. Why can't the software just be modemed to Australia and made up at some factory?

4) When will Commodore wake up and start pushing CD32 in those horrible Sega/Nintendo rental shops? Once it's firmly entrenched there, there'll be no stopping it.

P.S. Top mag!

Ed: *Re erratic behaviour from Commodore and their general marketing idiosyncrasies, we know, we know. Let's hope the reborn Commodore Asia-Pacific does more with such a remarkable product.*

Re local software distribution, that's not a bad idea, but it strikes problems because there's no way every company would set up an Australian subsidiary to make a few hundred copies of an esoteric package every year. The only way you could do it would be by some sort of cooperative venture, which would be rather complex.

P.S. We know!

On Screen Q&A



Hall of Fame



I'm writing to give you my thoughts on the Hall of Fame and also to ask for some help.

I think you should definitely not scrap the Hall of Fame, but maybe publish it every three months or so, with scores it's impossible to beat (*Barbarian 2* - 100% - Sid Vicious) being applauded and then wiped off to give more room.

Also, watch out for cheaters. *SuperCars 2* for example has seven stages, with a maximum score of five points per stage. If you put the comms screen on and answer the questions correctly there's a maximum five point bonus. That's a max of 40 points - so how'd "The Untouchable" get 42?

Now I'd like some help with the best game I've ever bought, *Cannon Fodder*. On Mission 19 there's only one phase, and it's hard. You have to destroy all enemy buildings and troops, and the only way I've found to do it is with the empty helicopter. But the helicopter's on top of a building in the middle of the screen, and I can't get to it - there are some boxes to the left I can climb on but they're not high enough! Please help!

I can offer some help for those with Action Replays in the form of addresses.

Grenades -

Snake: C01F4D

Eagle: C01F4F

Panther: C01F51.

Bazooka Shells -

Snake: C01F53

Eagle: C01F55

Panther: C01F57.

To change the rank of the player in first position, type in C00666. The maximum rank is 0F. The number of kills is at address C0066F.

Steve Demolinsky
Greenhill, SA

Ed: Graham Beavan, who wrote the review of *Cannon Fodder* in this issue, has as we go to press only reached Mission 12. He hopes to get a solution to your problem soon, or maybe a reader can help.

Syndicate Whinge



I read with interest your review of *Syndicate*, and was enthusiastic to buy it. But the dealer I asked about it told me I'd need a hard drive to run it!

I would like to know why this information is not written in the article. Had the shop had *Syndicate* in stock I would have bought it then and there and would have had to return it, and not been able to get my money back because I'd opened it.

I buy your magazine monthly and have done since it started, but I'd like you to give me one good reason why I should buy it if such important information is omitted.

George Taylor
Maryborough, Qld

Ed: We hate to tell you this, but the dealer didn't read the label very carefully. The Amiga version of *Syndicate* runs best on a machine with 1.5Mb of RAM and a hard drive, but it certainly doesn't need it - 1Mb and a floppy will do, it says so right on the box. Playing from floppy will of course be a bit slow and annoying, but them's the breaks.

That a good enough reason for you?

Classic Addict



I'm very impressed with the new super fast, million colour epics coming out these days, but I can't help pining for the days when a game was a little triangular spaceship and a load of rocks. I'm talking about the classics - *Asteroids*, *Boulderdash*, *Lode Runner* and yes, even *Space Invaders*. Nobody seems to have produced a decent compilation of these old chestnuts - where can I get them, short of writing them myself?

John Richards
Fremantle WA

Ed: Well, *Boulderdash* has come out in several versions for the Amiga, but you're right, there isn't much in the way of commercial versions of the classics, at least not faithful ones. But have no fear - help is at hand!

You see, there are lots of versions of classic games available as Public Domain or shareware, and you can get them very cheaply from any PD and shareware library, or download them from a bulletin board for even less.

There's umpteen versions of *Asteroids*, a rather good *Lode Runner* clone called *MineRunner*, the classic *Amoeba Invaders* if you're after a *Space Invaders* clone, and others - *Missile Command*, *Qix*, *Breakout*, *Pacman*, *Defender*, *Omega Race*, *Galaga*...

And if you're after the turbocharged, amphetamine injected versions, check out things like *Stardust* and the older *Super Space Invaders* in the commercial arena; the old ideas still work!





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Montage 24

24-Bit Video Titling

If your 16 colour video titles are starting to look a bit jaded, Montage 24 may be just the answer. Andrew Farrell checks out the first 24-bit video titler to hit the PAL market.

Montage is a professional looking product. It's published by the same people who brought us *Broadcast Titler*, a program which has been seriously out-performed of late by more versatile software such as *Scala Multimedia*.

Aimed at the serious videographer, *Montage* is not a program for the week-end tinkerer. It requires either an AGA Amiga, IV-24 or OpalVision card, at least 8Mb of fast RAM and an accelerator. An Amiga 1200 with extra memory will suffice, but more grunt doesn't hurt.

Installation is a snack thanks to the standard Commodore installer. *Montage* eats up a massive 10Mb of disk space, and includes eight fonts to get you titling

immediately. There's also a few sample images to demonstrate the program's potential.

Up and running

On screen, *Montage* will be familiar to users of *Broadcast Titler*. The entire program is driven by buttons, which may in turn reveal additional strips of buttons, and so on. This can make things a little confusing at first, and is clearly a complete diversion from the usual look and feel of Amiga programs. Why companies insist on departing from Commodore's carefully thought out style guidelines remains a mystery.

In reviewing this program I tried to

place myself back in the edit suite of a video company with which I spent a considerable number of hours doing animation and titling last year. The atmosphere was always hectic, and the pressure high.

I used *Scala*. The speed with which I could bash out elegant titles with interesting transitions, wipes and effects was what impressed the customers. *Montage* is aimed at the same applications, with the improved quality of 24-bit colour. Does it perform?

Positioning text

The right mouse button hides the menu and reveals the entire page you're working on. You can then bash text in wher-

Dispite offering a vast array of text styles Montage does not allow line based transition

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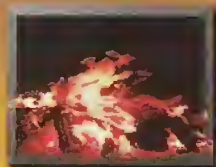
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Amiga Review
said Montage is like:
"...wading through fields of
cold molasses."



Compositing 24 bit images is possible, although once you have committed there is no going back

**SQUASH
STRETCH
SPREAD
EMBOSS
FADE**

Montage provides the ability to distort text in much the same fashion as a structured drawing program

ever you like, or import an existing text file. Choosing a new position can be a bit tricky. Selected text is surrounded by a bounding box, similar to many desktop publishing and structured drawing programs.

Text can be stretched in any direction, or proportionally resized. There is no snap to grid function and formatting is handled from a separate menu or by using the function keys. A little awkward. Furthermore, the program does not multitask, so you can't flip between *Montage* and your favourite text editor.

Backgrounds

The screen behind your titles may be left blank or decorated with a picture, or a solid or gradient background, or wallpaper. Working with gradient is reasonably straightforward. Choose your colours from the palette, the type of gradient from the six possible styles and render. It's all a bit like a 24-bit version of the old *TV-Text*.

You can also overlay additional boxes, which in turn may contain their own particular fill style and have numerous effects applied such as embossing, beveling and the like. However, should you wish to go back later and change the background - forget it, start again - *Montage* has locked it in!

Once you have a really hoopy looking box on your background, and decide it would make a great bullet for your text points, you can just clone it and paste it

where you need, right? Wrong. It can't be done.

What's more, as the page components increase in number, the rendering time seems to rise exponentially. And you can't see your text while the background is being edited.

Rendered images

Once everything is where it ought be, the magic render button turns your page into smooth, sharp, 24-bit text - complete with gradient fills, shadows and varying levels of opaqueness. Impressive, but a little on the slow side - and I was using an Amiga 4000/040.

In fact, all of this stretching, rendering and fiddling is quite time-consuming. The smoothness is achieved through full 24-bit anti-aliasing - a technique whereby pixels of colour in between the text and the background colour are placed in the steps which usually occur on diagonal lines at low resolution.

Working with 24-bit is slow on a good day. Perhaps this is not the answer to high quality video titling just yet - a faster video card would help.

Displaying a sequence

If you have a whole series of pages to display, with transitions, you'd better have some spare hard drive space. Every page has to be rendered to disk first - and we're

talking around 800K per page. Transitions may be triggered from a vision mixer via the second joystick port.

You can move about between pages using the cursor keys and page attributes can easily be copied to a new page. The transitions are fairly simple. There are no line effects. The sequencing aspects of *Montage* are limited when compared to other programs.

Wrap-up

Montage is slow. It failed my real world edit suite test. However, the finished images it generates are truly brilliant. There is no other program like it available right now - although the imminent release of the new Opal boards may change all that.

Right now I can honestly say *Montage* is the best 24-bit titling program available for the PAL Amiga. Stick to page mode, render ahead of time, avoid the transitions and wipes and you will live long and prosper. Roll up to an edit suite expecting to knock up some quick titles in *Montage* and you run the risk of having the editor and producer punching a hole in your monitor. □

Fact Box

Montage 24
Distributed by
Tupsoft (02) 482 7040
RRP \$449.00

WARRANTIES AND YOUR RIGHTS

by Daniel Rutter

Where do you stand when things don't work out? Have you ever been stuck with a broken chunk of high technology, a couple of months after you bought it, and discovered to your horror that the warranty wasn't all you thought it was?

"Sorry mate, but you didn't send in your registration card."

"You'll have to talk to the manufacturer."

"Can't fix that, they don't make it any more."

"Hey Charlie - didn't this mob go out of business last week?"

And so on. Most consumers have heard at least one of these stories for some gadget or other, but most people don't know that not one of them stands up legally.

This doesn't mean the people you buy from are necessarily shysters - it's just a reflection of the general woeful ignorance of the law from which both retailers and consumers suffer. You might be surprised at what the law actually says!

This article is slanted towards buyers of computer gear, but it applies to just about anything you buy. It looks at some of the situations unfortunate purchasers find themselves in, and what their rights are. The various laws and requirements form a slightly confusing self-referential web, but it's all quite logical once you get the hang of it.

"You're not a registered owner. Can't help you."

Oh yes he can! The warranty, for the stated period, is automatic. If you've bought the box and retained the receipt you've got the warranty. You don't need to fill out bits of cardboard and mail them back, although it's still good to do, so that your purchase is registered. You have absolutely no legal reason to return a registration card, though, and your warranty works fine without it.



"Hey, we never said anything about a warranty. There is no warranty."

Ah, but there is. You see, there are certain criteria goods have to fulfil in order to be sold, and if they don't you're entitled to a complete refund. Not an exchange or replacement - although you can have one if you like. A refund.

BZZZT!

The stuff you buy has to be safe. The computer has to be passed to run from Australian mains voltage, and mustn't do things like catch fire, belch toxic chemicals or interfere with aircraft avionics and cause 747's to park in your lounge room. These rather drastic problems are dealt with by the government so there's functionally no danger, but similar hazards do emerge now and then.

For example, if somebody dropped your shiny new A4000 during packing, there's a small probability that the shock could have broken the earth wire on the power supply. This results in a machine that could, if an internal short circuit occurred, turn the user into Marvo the Human Torch instead of just popping your house's fuses.



"OF COURSE IT'S PORTABLE SIR, LOOK, HERE'S THE HANDLE."

If this indeed happened and you could prove it wasn't your fault that there was a you-shaped hole in your computer room wall, you'd be entitled to a refund, which would make your next of kin feel much better.

"Would I lie to you?"

The stuff you buy also has to be honestly described; if the salesman said it had eight megabytes of RAM and it really only has four you're obviously entitled to your money back. The store can't wriggle out of it by offering you the rest of the memory in exchange; you're perfectly within your rights to get a refund and take your custom to people who know what they're selling.

You also have the right to equality of bargaining power and fair agreement. This, in essence, means that you can't be ripped off, or at least not by too much. If somebody fast-talks you into buying a \$1,000 A1200 computer for \$10,000, and that somebody knew he was pulling the wool over your eyes, you can renegotiate the contract. This does NOT necessarily mean you get a complete refund, but you could reasonably expect compensation for the excess.

What's reasonable?

However, if you're ripped off by somebody who couldn't reasonably know the true value of the goods sold - for example some pimply checkout clerk - then you're not entitled to renegotiate. This is the first of several difficult legal areas; whenever the word "reasonable" crops up you'll find many and varied opinions of exactly what falls within the bounds of reason.

In the same vein, you have to be truthfully informed about whatever you buy. If you need something to make your computer work, for example a monitor, then the seller has to tell you that. He can't, however, tell you that without a \$60,000 146 inch rear projection display your machine will be useless.

This is another debatable area of law. If you just want a basic machine but you ask the salesman for a system that can do digital video editing, and he therefore sells you an A4000 with a 24 bit card, genlock, huge hard drive, ultra fast everything and all conceivable bells and whistles, you're

stuck with that machine, whether or not it's what you really wanted.

It will do the job you told the salesman you wanted to do, and it's not his fault that you didn't know what you were talking about. So, in brief, don't pump up your ego by pretending to be an expert when you're not!

"... once you're out of here, you're on your own, son."

No you're not. Everything you buy is covered by what's called an implied warranty, even if the seller expressly states that there is no warranty. The implied warranty covers all the basic things that you take for granted when you buy something. To wit: Goods must be as they're described. This is much the same as your right to honesty, as described above. If something you buy differs in any way from what you were told it'd be - whether it's a different colour or shape, has a different hard drive size or whatever - you're entitled to a complete refund.

Note that this doesn't mean you can get your money back if you get the wrong end of the stick about something; if the salesman said A1200 and you heard A4000, and it plainly said A1200 on the box but you managed to miss it, then congratulations! You're the owner of a smaller computer than you thought!

Goods must be of merchantable quality. This is yet another rather malleable term; it basically means that whatever you buy, it must be of the quality standard you'd expect for goods of that type. So if you buy a new Amiga and it's physically damaged or has any malfunctions then it's not of merchantable quality.

In this case, you're not entitled to a refund; the seller can replace or repair goods not of merchantable quality, or just pay for you to have the thing fixed yourself.

Furthermore, if you buy a really expensive computer with the same hardware specifications as a really cheap one, it should last much longer without a breakdown. If it does break down in, for example, the first year, you could reasonably expect the seller to repair or replace it, as above, whether or not they said such a warranty existed. This bit doesn't really apply to Amigas, but it's important for clone buyers.



Damaged goods

If you buy goods which are specifically described as damaged (water damaged, dropped during shipping, whatever), merchantable quality goes out of the window. If it's bought "as is" and it doesn't work, tough. All the other regulations still apply; you have to be honestly told that the goods are damaged, they still have to be safe and so on.

Goods must also be fit for their intended purpose. This is another concept not quite as straightforward as it looks; if you asked the seller for a PC to play games on and he sold you the above mentioned monster video machine, you wouldn't have a comeback under this particular clause because this utterly humungous computer would, indeed, play games.

If, on the other hand, you're a travelling salesman and you need a machine to take on the road, and you're sold a laptop computer that turns out to have half an hour's battery life and weigh as much as a bar fridge, you can reasonably say it's unfit for the purpose.

The major problem here is that again it comes down to the expertise of the person you bought from. If it can be shown that the salesman knew what he was talking about and deliberately sold you something unsuitable, then you've got a case. If, on the other hand, the adenoidal ex-

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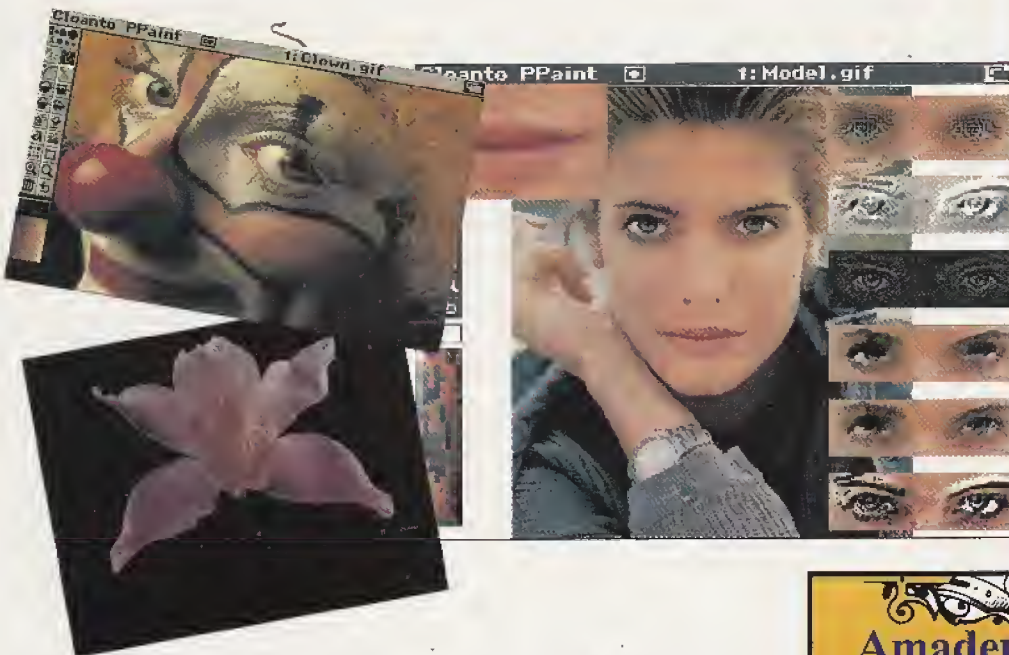
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McDonald's employee did the selling and patently didn't have a clue what he was on about, you're stuck with the product.

And again, if the salesman suggests an option but you, in your unlimited wisdom, insist on something else which turns out to be completely unsuitable, you're stuck. To repeat; humility is the best policy when you're not an expert in the field!

Bulldust

Just to depress you further, it's fine for a salesman to use a modicum of the old blarney on you. He can spout personal opinions about the products at great length, and these do not necessarily have to be true, as long as they are really his own personal opinions (and try proving they're not).

So the salesman can quite legally say "this is the fastest graphics board that I've encountered" or "I don't think you'd ever need anything bigger than an A600", and if it later transpires that there is indeed something faster out there, or that you're stuffed without an expandable machine, then you don't have a case.

If, however, the salesman makes an error of fact - saying the A1200's standard 40 Mb hard drive is big enough to store hundreds of 24 bit images, for example, then you can take action.

"You've decided you don't like it. Tough. You bought it, mate."

On this one, they've probably got you. You can't buy something, take it home and find that it works perfectly and does what it was supposed to but it's just not really what you want any more. The seller may well give you an exchange or refund, but they're under absolutely no legal obligation to do so. But given all the reasons above, you should be able to find SOME grounds for complaint!

Disclaimers

Many stores display signs saying all sorts of funny things about your rights. You know - "Do Not Ask For A Refund As A Kick In The Teeth May Offend."

These signs, where they don't line up with the law, are a bluff, and a dangerous bluff at that.

Similar disclaimers show up on warranty cards, trying to gyp you out of your rights. Any express denial of anything mentioned above isn't legal, but there are a few more choice morsels that you might like to ignore too.

A warranty that only covers, say, a year, is invalid as regards product defects. If there's something inherently wrong with your computer it doesn't matter if it takes ten years to manifest itself; when it does, you can get it fixed for nothing. Of course it can become remarkably difficult to prove that the fault came from the production line, but there it is.

Interestingly, the old favourite of disclaiming against normal wear and tear is also invalid. It's all tied up in the word "reasonable" again; if you could reasonably have expected the computer to survive something, it should be fixed for free if it didn't.

Likewise, warranties can't tell you how to use the computer. If they say it only covers use in the home, for example, then it's fine to use it constantly for totting up figures in your shop. But, used this way, you can't reasonably expect the computer to last as long.

Similarly, the warranty can't say that you lose your cover if you don't read the instructions (hey, who does?). If you use your Amiga in the way that an Amiga should reasonably be used, then you're covered if the thing has some bizarre configuration that causes the monitor to implode if you type the word "Manilow". If, however, you decide to use the machine underwater, you're on your own. And headed for a closed casket funeral.

The "authorised dealer" concept is a cute one, used by various manufacturers and apparently invented by more than a few distributors, as well. Manufacturers give a sticker to whichever dealers meet their exacting standards, and if you bought from someone else your warranty's void.

Oh no it isn't. Only if you bought your computer overseas is your warranty really void - so much for the cheapie shopping trips to Hong Kong!

"Authorised repairers" are similar. Some warranties say they're void if the gadget has been messed about with by anyone they don't authorise. This isn't valid, unless the unauthorised repairer (uncle Bob who's good with electric stuff, look at the exhaust fan he wired in the bathroom) did something dumb and broke

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the computer even worse than it was. In this case, you have a case against the incompetent repairer (but who could sue ol' Bobby?).

Some warranties try to get you to pay all the freight costs involved in carting a faulty product around; others try to tell you that repair parts are free but not labour or vice versa. All of this is bull-dust; all you normally have to do is take the busted gadget back to where you bought it from, and all repairs must be free.

If you report people who display such signs, they can pay pretty frightening fines, but resist the temptation to tell them all about their wrongdoing. Making waves is not a good policy unless you're the kind of person who likes bargaining by intimidation and has a black belt just in case.

And NEVER lose your cool. Ranting and raving might get results - it's amazingly bad for business to have someone loudly badmouthing you in the middle of the store - but getting confrontational makes sure that if the seller wasn't your enemy before, he sure as heck is now.

Enforcement

Okay, the salesman said it would do X, instead it does Y, how do you go about getting your money back? Well, unless you have written evidence you could be in trouble. Most reputable stores will deal with your problem civilly enough, to avoid you making a scene in the store (remember, this is never a good idea), but if you can't prove what the salesman said you could be in a bind.

Barring the possibility that the salesman gallantly comes forward and admits to hoodwinking you (ha, ha), there's no way out of this unfortunate situation - you have to avoid getting into it in the first place.

If you have any doubt about what you're getting and what you've been told, get the seller to put it down on paper on the store's letterhead, with a signature. There's no need to put the salesman through a third degree interrogation, but



at the same time you shouldn't have any trouble getting written confirmation, if you've been told the truth.

The place to call if you do have a problem and the seller doesn't want to know is the Trade Practices Commission, to make sure of your position. If worst comes to worst you could end up in court (expensive) or at the Small Claims Tribunal (much more reasonable).

Amiga specifics

Amiga owners have always been a particularly fertile source of warranty complaints, because of the nature of the Amiga market. Since the Amiga isn't a mainstream computer, many of the weirder peripherals are both less well tested than, say, an IBM equivalent, and far harder to obtain. Let's take a worst-case example.

If you want the latest whiz-bang graphics card, your friendly Amiga dealer will most likely have to order one in from its homeland - for example Germany. Since it's brand new, it's not been totally debugged, and lo! the software screws up on your computer. You phone the dealer and make unhappy sounds. The dealer phones Germany in an attempt to find out why your board doesn't work with *Lemmings* and discovers to his dismay that the creators of the board have realised the crippling nature of the problem and skipped to Argentina with the money.

Much cursing occurs.

If the dealer specifically said "this board will work with *Lemmings*" then he's dishonestly described something he should have known about and you get your money back. You are legally within your rights to take back the board to the dealer, since it is not of merchantable quality. But if no such statement was made - and it's not unreasonable to suppose that a fairly old program might screw up on the new board - all he need do is repair or replace it.

Since he can't fix the existing board, he could give you another graphics board that DOES work. For you, the problem is solved.

The dealer, however, is somewhat stuffed. He's left with a board with a known fault that he now can't sell to anyone without mentioning the problem (if he doesn't, he's dishonestly describing

Your Rights in Summary

- Safety
- Honest description
- Fair agreement
- Information
- Redress
- Implied warranties
- Goods must be as they are described
- Goods must be of merchantable quality
- Goods must be fit for their intended purpose.

it), and there's no way he'll get his money back.

But remember - this is not your problem. You made your contract with the dealer to deliver a product, and if you didn't get it, you're entitled to compensation.

Mummy!

After looking at all this, your first reaction may be to throw your hands up in horror and go back to using an abacus. Don't worry, you'll most likely never need to use more than a fraction of all this, since simply being informed generally makes sure that problems don't arise in the first place.

Computer equipment tends to exhibit rather peculiar behaviour - it either breaks down when it's very young or works for ages without a problem. With a little maintenance and fair treatment, your Amiga isn't likely to ever need much in the way of repairs, warranty or not. But, just the same, it's useful to know what the rules are should you ever need them. Remember, these laws apply to just about everything you buy.

We deny everything!

After all that here's OUR disclaimer, which we assure you IS legally binding.

Everything in this article is, to the best of our knowledge, true, and we have taken pains to ensure its accuracy. If, however, we're wrong in any particular or you misinterpret anything and therefore incur financial or any other damages, we accept no responsibility.

Feel free to write us an abusive letter, though! □

How to get Broadcast

Yes, you can sell your Amiga graphics to TV stations. Steve Peters explains how.

Are you one of the few who watches the ads on TV and can't get to sleep until you've worked out how the graphics were done?

Perhaps your own humble attempts using *Deluxe Paint* don't match the Coke ads in terms of slickness, but you may well have a natural sense of layout, or even that rare commodity called style which gets attention in graphics.

If you're confident of your ability, you may be able to come up with material which a TV station will be eager to broadcast - and pay for! But the station engineer won't take kindly to you waltzing into their editing suite with an A1200 under your arm and no idea of how to put your precious animation onto tape.

Chances are, the on-line suite of your TV station may have an Amiga already. If so, this could be your lucky break; they'll have a broadcast-quality genlock (Neriki or similar) and the machine will be hooked into the system and ready to go.

Unfortunately, your station may have never learned to use their 1989 model A2000 properly and disenchantment has set in - or they may have had their fingers burned with other PC-based systems which promised more than they could deliver.

Your first phone call to a producer offering your graphics services is unlikely to lead anywhere unless you know what

you're doing - and this involves getting some specific info about the station's production facilities.

Understanding the plot

TV production people are busy, over-worked people. So they are always looking to save time - and they may give you some of their precious time in order to look at what you have to offer, even if it doesn't fit into what they have been doing in the past.

On the other hand, they aren't likely to be very interested in hearing about the foibles of your own computer. You see, broadcast production suites are very expensive things, costing a few million dollars, and their time is charged at around \$350 per hour. The good news for the producer is that you are in a position to save him/her time and earn you both some money. It's up to you to prove it!

So for the moment, forget about desktop video and find out about some of the impressive equipment they've got in their on-line suite which you and your graphics can make good use of. If the studio is any good it'll have a real-time digital effects processor like a Pinnacle or an ADO.

This expensive little beauty is the creative heart of the studio. Like the Video Toaster only better, it can zoom, spin, multi-layer framestore, magnify, reduce, perhaps even recolour incoming video. If you had intended to animate these simple effects on your computer, you'd do better to spend your time and effort concentrat-

ing on what the station's equipment can't do.

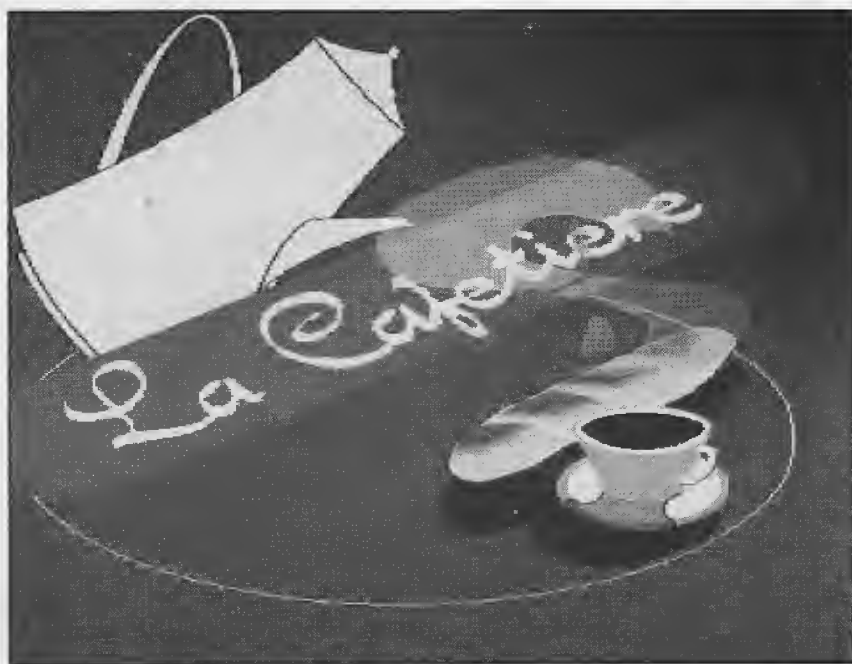
Resolution, resolution and resolution

When working for TV we have to remember the industry's obsession with resolution. The simple rule is, work in as high a resolution as possible, using the full screen for a graphic which can be reduced later to gain resolution.

If a graphic is tall and thin, say a human figure walking, don't hesitate to turn your monitor on its side and gain those extra pixels by drawing your figure sideways, taking up the entire width of the screen: the super hi-resolution will bring a smile to the editor's face and the ADO will quickly flip your figure upright, at the same time reducing it to the size needed and gaining the kind of resolution unheard of in the computer graphics world.

Even so, your graphics will have to be pretty classy if you want to divert the editor's gaze from the vector-scope and other image-analysers which are the tools these stations need in order to come up with consistently high-quality video. The sad news is, in their view no computer comes up to scratch, broadcast-wise on a purely technical level.

Dare to mention Inno Vision's new *Montage* titler software for the Amiga with its "1-nanosecond apparent resolution" (even 20 Nanoseconds is pretty damn sharp) and you're likely to get into a dispute with a tech over standards: to us Amiga users, clever anti-aliasing on the



edge of a letter U can smooth out the jaggies nicely.

But all the tech sees when he points the vector scope at it is a fuzzy line - and that, he will tell you, is not up to broadcast standard.

Still, we know it looks right. Let's hope your apparent fine-quality work will win the day. Until the day computer people and TV technicians share the same technology, we will continue to know a little more about how the human eye perceives graphics than they do. But they'll continue to call the shots. So in brief, here are the rules:

The first steps

You'll need a portfolio of work. Get your first graphics job the best way you can. Try asking companies, charity bodies, anybody if they'll let you do a free TV commercial graphic for them. This will make a better impression than a sample-only logo for a product which doesn't exist.

Make sure you satisfy their needs, after all, they know their product. If they decide to use your work for broadcast, you're IN, meaning that for a few, glorious minutes, you'll have access to a real TV production facility. So just make sure you don't waste the studio's time.

These two images demonstrate how creating a matte for an image would look - this is done in order that the ADO can mask out edges which may bleed



Before starting to produce any graphics, try to pick the brains of some friendly studio tech, who is likely to be far more approachable than the producer. Okay, so the studio has an ADO. What kind of inputs can it handle? If it has an RGB input, you're in luck.

With the right kind of cable from your own Amiga, you have access to all kinds of possibilities of keying one image over another. If they can only input composite video, bring along the best encoder or genlock you can get your hands on. Broadcast suites do not normally have Y/C inputs for S-VHS, but they do sometimes have the superior Betacam component inputs.

Digital Tape

Do they have digital tape machines, like D1, D2, D3? If so, your work is much easier; you can animate your scrolling mountain background, lay it onto one tape, then record your animation of trees moving by, and so on: then the editor can combine and key the images over one another dozens of times, with none of the generation-loss of quality you get with normal analog Betacam or 1-inch tape.

Don't forget to de-saturate your graphic's colours BEFORE arriving for the editing session. (For a TV-safe palette try

using *Video Tools on Tap*). But be prepared to make quick in-studio palette adjustments anyway, especially if your client's logo has forced you to use red or colours which tend to bleed.

One trick here is to pull back the luminance (brightness) of these colours, making the reds blacker, while at the same time making the whites as bright as possible in contrast. You can help the editor by making a matte which the ADO can use to mask the edges of the graphic where the bleeding has taken place: for each frame of graphic, make up a negative image in which the original graphic appears as a transparent hole in a full-overscan screen of a non-transparent colour. White is a good choice for this matte.

Going 24-bit

Does the studio have a single-frame recorder? This is the only way you'll get some animations, especially 24-bit, direct to tape. But there is way around it:

Melbourne's Swinburne video unit prefers putting Amiga animations to movie film a frame at a time, then converting the film to video-tape. The economics are simple: In addition to your monitor you'll need a secondhand Bolex camera, (about \$500), a 2+ minute roll of Kodak 7245 16 mm film, (with developing costs around \$100) and the process of converting to broadcast video tape known as telecine, (\$100). In addition to saving the TV studio lots of time in single-frame recording, your animation will have that film quality we see on cartoons.

Using film, you can even work in 24-bit without needing an enormous hard drive. Just preview your anim in *Deluxe Paint* or *Brilliance!* to get the timing right, then render each image again in 24-bit, photographing each in turn as you paint them. If you're a photographer, you might like to try fog filters, multiple exposures - the possibilities are endless.

The studio will be delighted if you show up with your animation already on

videotape, ready to be further manipulated if necessary. If you don't, you'll have to present them with a format they can use - and this may mean converting your Amiga's IFF files to GIF, TIFF, or some format which can be displayed on the PC or Mac they were talked into buying but which nobody had time to learn.

Don't point out their folly until you've worked out whose fault it was ... just use *AD Pro* for the file conversion and smile as you hand over your floppies or Syquest cartridges. And when you do manage to get your first real job, my advice is to make it your number one priority so as to get the graphic back to them quickly enough to impress them with your speed. (When you breeze into the station, remember to wear your shades to hide the fact you've been up all night working).

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An introduction to INTERNET

John Paul Lonie explains how you can benefit from world's largest network, synonymous with the term cyberspace.

Some people with modems are regular Internet users, for others the Internet is a jumble of jargon and stories. This article will help to clear up some of the mystery behind the Internet and associated jargon and explains what it is, what it's good for and, most importantly, how to get it.

First, a little history lesson.

The history of the Internet started back in the good old USA about 20 years ago. The Department of Defence decided it needed a way of letting all its bomb makers tell each other what wonderful advances they had made in turning useful objects into smaller not so useful objects. This network was ARPAnet.

About 10 years down the track other, smaller networks started to appear on the scene. As these networks used the same standards, there was a push to link different nets.

So for the first time it became possible for almost anyone on the Internet to use computers that, until then, were just for guys in white coats who built bombs.

Who runs the Internet?

There is no single person or company that owns the Internet. It is guided by a voluntary organisation that meets to discuss problems and solutions. The users are also free to express their opinions.

The Internet is not strictly controlled.

Its job is to promote the world wide distribution of information. If the users are happy, the net is happy.

So if no one runs it, who pays for it?

Just as there is no single organisation that runs the net, there is no single organisation that knocks on your door at 4 am demanding money.

Anyone who supplies a service to the net pays to keep that service online. Everyone pays for their part. The connections between these networks are split between the two networks that are joined.

What's in it for me?

To the end user there is no need to know how the Internet works or how it was created, but it does help you understand why things are as they are.

If you want to get the most enjoyment

out of the Internet you must give it some learning time. The best rule of thumb is if you are considerate to people they will be considerate to you.

The Internet is full of so many interesting things to explore and do that I could not possibly list them all. It would be the subject of at least a book or two.

For starters, you can send private e-mail to people all over the world. Imagine talking to the Commodore engineers about problems you are having, suggesting software additions to its author or just having a penfriend in another part of the world.

The best part is that once you have written your letter it is sent around the

A selection of message descriptions showing the diversity of subjects within one area

term 3.4 '030 (16.7.93) - Screen name "TERM"			
Area Number	Area Name	Area Description	Area Status
1385	Reaching@netcom.c	All	cancel (reachingCJCr5A.
1386	Reaching@netcom.c	All	Re: Best Buy Powerbook
1387	Reaching@netcom.c	All	ULM & networking news
1388	Reaching@netcom.c	All	MAC (OEM) BLACK MONITOR
1389	Reaching@netcom.c	All	He p with CMOS password
1390	Reaching@netcom.c	All	Where Microsoft EX0010 i
1391	Reaching@netcom.c	All	Disabling CTRL-BRK dur
1392	Reaching@netcom.c	All	Re: Help with CMOS pas
1393	Reaching@netcom.c	All	cd rom drives
1394	Reaching@netcom.c	All	***CD titles \$6 to \$8*
1395	Reaching@netcom.c	All	Re: ***CD titles \$6 to
1396	Reaching@netcom.c	All	Wanted: CGA card (Helb
1397	Reaching@netcom.c	All	24 Bit color cards
1398	Reaching@netcom.c	All	Problem with DOS 6.2 a
1399	Reaching@netcom.c	All	LOI SCSI/ESDI set up.
1400	Reaching@netcom.c	All	Microsoft Developers N
1401	Reaching@netcom.c	All	Re: Microsoft Develop
1402	Reaching@netcom.c	All	Jumpers settings for Se
1403	Reaching@netcom.c	All	Re: Problem with DOS 6
1404	Reaching@netcom.c	All	Video Cards
1405	Reaching@netcom.c	All	Re: Problem with DOS 6
Status	Ready	Protocol	zmodem
Font	IBM	Terminal	ANSI/VT102
		Rate	19 200
		Params.	8-None-1
		Time	23:53:44
		Online	00:03:57

tern 3.4 *030 (16.7.93) - Screen name "TERN"

3991	Internet	- apana.syd.uucp	3992	Internet	- apana.syd.list
3993	Internet	- apana.announce	3994	Internet	- NSW.general
3995	Internet	- apana.netstat	3996	Internet	- apana.syd.save
3997	Internet	- apana.syd.bin	3998	Internet	- apana.general
4001	Internet	- aus.general	4002	Internet	- news.groups
4003	Internet	- comp.mail.miso	4004	Internet	- comp.mail.uucp
4005	Internet	- news.software	4006	Internet	- aus.comp.ibm.pc
4007	Internet	- comp.sys.m68k	4008	Internet	- aust.games.role
4009	Internet	- c.s.a.announce	4010	Internet	- c.s.a.adv.c-sou
4011	Internet	- cs.applications	4012	Internet	- c.s.a.audio
4013	Internet	- c.s.a.datacomm	4014	Internet	- c.s.a.emulation
4015	Internet	- c.s.a.games	4016	Internet	- c.s.a.graphics
4017	Internet	- c.s.a.hardware	4018	Internet	- c.s.a.introduct
4019	Internet	- c.s.marketplace	4020	Internet	- c.s.a.misc
4021	Internet	- c.s.a.multimed	4022	Internet	- c.s.a.programmer
4023	Internet	- c.s.a.reviews	4024	Internet	- aus.comp.amiga
4025	Internet	- amiga.uucp	4026	Internet	- amig.uucp.patch
4027	Internet	- alt.cyberpunk	4028	Internet	- games.roleplay
4029	Internet	- aus.games	4030	Internet	- alt.drwho.creat
4031	Internet	- rec.arts.drwho	4032	Internet	- aus.sf
4033	Internet	- rec.arts.sf.sci	4034	Internet	- aus.sf.startrek
4035	Internet	- startrek.info	4036	Internet	- startrek.tech
4037	Internet	- fan.machetti	4038	Internet	- red.dwarf
4039	Internet	- nortin.exposure	4040	Internet	- devil.bunnies
4041	Internet	- aus.jokes	4042	Internet	- aus.jokes.dirty

Done (Y/n/-):

Status	Ready	Protocol	zmodem	Rate	19 200	Time	23:52:10
Font	10MB	Terminal	ANSI/VT102	Params.	8-None-1	Online	00:02:23

Internet has literally hundreds of mail areas

world in minutes - there's no more waiting for a reply for weeks. It is common to have daily chats with people overseas.

Newsgroups provide a great way to

spend a few hours. There are conferences for everybody. Besides computer based topics, you can chat about astronomy, cooking, hobbies, crafts, music, pets, etc.

You can chat to people around the world. Large multiuser games are also very common on the Internet, and can be a great source of fun as you create your own person in a fantasy world.

These games, known as MUDs (Multi User Dungeons) can be set in modern or ancient times. It has been known for people to go to bars and nightclubs in MUDs and even for the odd relationship to spring up. MUDs are as real as you make them.

The Internet is also the best source of files for the Amiga. Files are released first on the Internet and can take weeks to filter through to BBSs. Even Fred Fish releases all his disks on to the Internet before he sends them to his subscribers.

NASA is connected to the Internet, and provides daily updates on launches, space pictures and general news and information. You can get files from NASA about all the past missions and their results. A great aid with assignments and the like.

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Scenery Animator 4

Virtual virtual reality

Damian Sainsbury explains an amazing program which allows you to create your own fly-through or static view of real or imagined landscapes

With all the hype about virtual reality being trumpeted around the PC universe, we Amigans can feel smug in the knowledge that we've had the same stuff for quite a while. The Amiga platform is blessed with at least three landscape generators: *Vistapro*, *Scenery Animator* and *Genesis*. It's true *Vistapro* has been released on the PC but it's slow on animations and limited in display options.

[Ed: Of course, none of this stuff is real virtual reality. Real VR involves a helmet, probably a dataglove and a whole pile of processing power. This stuff is just, well, landscape generation. But no matter.]

Scenery Animator - what is it?

You don't have to be an artist to use this program. Like *VistaPro*, *Scenery Animator* allows virtually anybody to create fantastic views of real and imagined scenery. Choose your view, add trees, water, sky and other attributes then click the render button. Your Amiga will chug away for a while, and then display the resulting view.

If you have a fast enough machine, with plenty of disk space, you can even render animations of what you would see if you flew through some of the scenery files included with these programs. Using fractals, both programs can also create random scenery, which looks real.

Most people know *Scenery Animator* as the "other" fractal landscape generator, a gangly adolescent cousin to *Vistapro*. It is, however, the quiet achiever; a professional, intuitive program which excels *Vistapro* in many areas, especially in making quality animations.

This latest edition has leapfrogged from version 2.2 straight to 4, implying some major improvements. I wonder if the next version of *Vistapro* will be number 5 in retaliation? This jump is justified when you look at the list of new goodies on offer. There's AGA colour and screen sizes; the ability to include 3D objects in

Fact Box

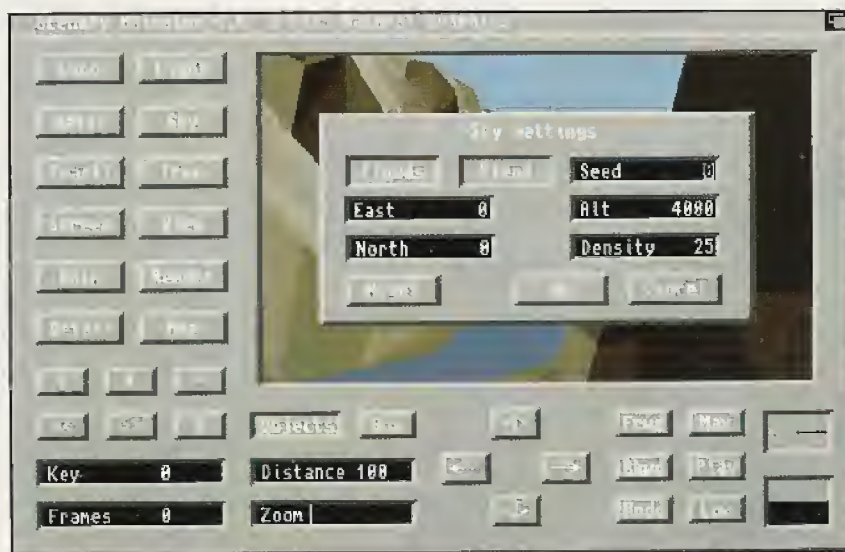
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your landscape and animate them; and improvements in camera positioning.

Hardware requirements

Scenery Animator 4 requires a minimum of three megabytes of memory. There are two versions of the program contained on one disk; a floating point

Scenery Animator can generate very realistic clouds





The interface uses a simple array of buttons and a smattering of pull down menus

version for owners of a coprocessor; and a standard version for those without. AmigaDOS 2.0 or higher is necessary, but you can get along quite well without a hard drive. As with all of these maths intensive graphics programs an accelerator and/or coprocessor is recommended unless you are an extremely patient person. I use an A1200 with a 68030 and 68882 at 40Mhz, which gives very quick updates in the preview window.

Installation is easy, as there are no accessory libraries to copy. You just drag either of the two versions over to the directory in which you want *Scenery Animator 4* to be installed. This economical use of libraries saves hard disk space for more valuable things.

The program itself occupies only 288,000 bytes, in comparison to *Vistapro's* 598,000. Realistically, one should compare *Scenery Animator 4* with the combination of *Vistapro* and its animation compadre, "Makepath", so that you have equivalent animation capabilities. This brings the total program size for *Vista* to 718,000 bytes.

How does it work

Scenery Animator works in the same way as 3D object renderers such as *Imagine* by considering a landscape as a massive web of interlinked triangles. There is

an algorithm for colouring the triangles in a way that mimics nature. For example, the lower lying plains are shades of green to represent grass, while cliffs and mountains will appear as grey, brown or white to mimic rock, soil and snow. The colour of a triangle will be calculated to be lighter if it is in sunlight and darker if in the shade.

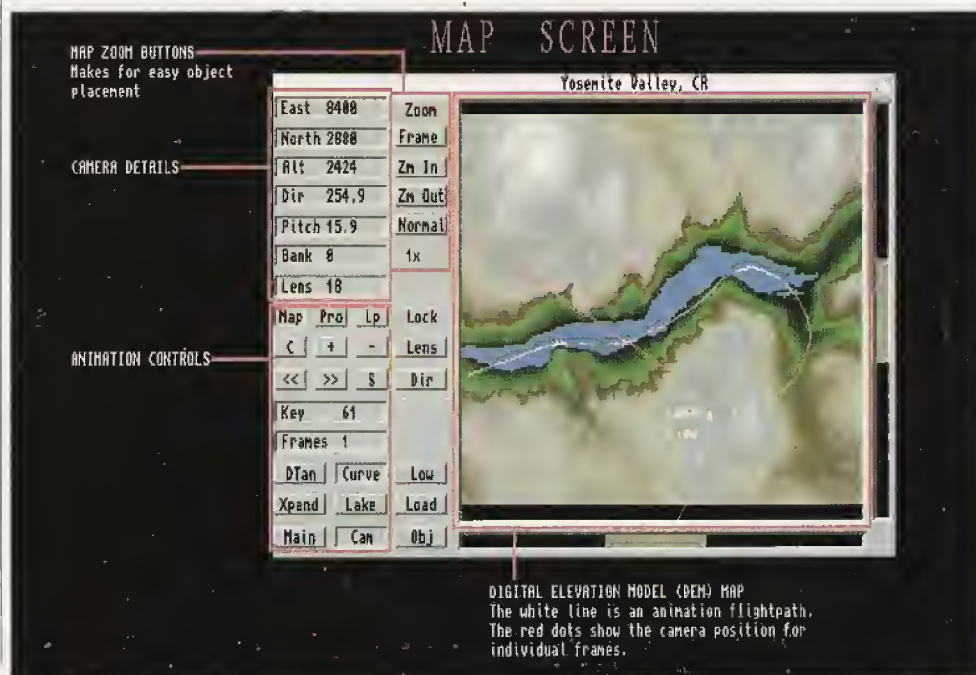
To give smoother colour transitions between adjacent polygons, the edges are

shaded and blended so it is difficult to see where one ends and the next begins. The preview screen gives you a coarse rendering in shades of brown, forgoing image quality for speed. And speed it does with my 68882 - screen updates happen in one third of a second. This gives a virtually real time preview of animations with images that are equivalent to the size 8 polygons of *Vistapro*! These figures relate to standard sized landscapes with no objects loaded; things slow down as you add complex 3D objects.

You can use the ready-made scenery from DEM (digital elevation model) data included on the companion disks, or you can create imaginary landscapes through the fractal DEM generator. This takes a random number and uses it as a seed to generate a fractal pattern, which is then converted to a DEM file. It is possible to link a series of random fractal DEMs into a seamless strip of land for long animations with the "Append" function in the fractal panel.

Making your first landscape

The first decision is to choose between a random DEM or one of the many huge DEMs included on the landscapes disk. We'll take Yosemite National Park for



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starters. I wanted a river in the bottom of the valley so I clicked on "lake" and then on an appropriate level on the map screen. The water flowed down the slope, creating a river with interconnecting ponds. You can turn mountains into islands if you so desire by placing the water level high up on the slopes, or by using the "ocean" button in the "water" panel.

How high do you want your mountains? Altering the vertical elevation factor will raise or lower them according to your preference. If you prefer tall rugged mountains a la South West Tasmania try altering the elevation to two or three. Federation Peaks and K2s will appear!

Now that you have some dirt on the screen, sit back and enjoy. One of the most entertaining parts of making your scenery masterpiece is watching the preview screen whilst you scoot about the landscape with the camera positioning tools.

The camera positioning gadgets have been improved in version 4. There are now four large arrows which move the camera a set distance up, down, left or right. The distance can be altered in a string gadget on the main screen. Next to this are buttons for moving back and forth. These buttons are much more intuitive than the old XY, XZ and YZ axes in version 2. A gadget for zooming the camera's focal length sits directly below the distance requestor.

On the extreme right of the screen are the pitch and tilt indicators, which look like instruments from a jet plane cockpit; not an unreasonable metaphor, as you could consider *Scenery Animator* a kind of "slow" flight simulator.

Now to the sky. SA4's clouds have always been realistic, even in 16 colour mode. The new AGA 256 colour mode gives superb skies while reducing memory use. HAM8 clouds are phenomenal. To come close to these effects on *Vistapro* you have to fiddle with the dithering options - even then 256 colour *Animator* beats *Vista* HAM8.

The tree options are Oak or Redwood: less than is available in *Vistapro* but they make up for this with the excellent detail of the foliage. SA4 trees look a treat, even in close up views. You can change the leaf colour to give the impression of autumn or spring. Pink and white leaves

make trees appear to be in flower.

An improvement on version 2 is that manual placement of trees is now allowed, which is great for creating tree-lined creeks or groves. This is effected by single clicks on the DEM map while the object selection mode is enabled. The zoom feature on the map makes accurate placement easy. Now you can place a tree at the very peak of a mountain, which does look rather strange, like some kind of Japanese religious icon.

The "light" button opens a panel with a gadget for positioning the angle and direction of the sun. It's nice to be in command of the weather. Steep angles give an interesting dawn/dusk ambience, whereas overhead lighting reduces contrast, resulting in a two dimensional appearance. New to SA4 is the night option, which leaves the sky jet black. It is necessary to darken the landscape colours to give night landscapes more appropriate contrast.

Stars can now be added to SA skies via the "objects" selector. Stars are manipulated as 3D objects; they have xyz coordinates and may be animated. You can add individual stars or whole constellations. Subtle dusk lighting looks very impressive with stars. The trick here is to alter the sky colours to approximate that of a sunset and to place the sun near the horizon. To complete the effect, add warm tones to the land features.

New AGA modes

SA4 now has access to most of the new rendering modes. Screen sizes vary from 256 x 320 up to 1536 x 580 with overscan in super hi-res interlace mode. In all screen sizes you can use 16, 32, 256, HAM and HAM8 modes. There is one exception: 16 colours are not available in lo-res. The standard HAM and 256 colour modes look incredibly smooth, and are good for making large animations, thanks to the small size of each image.

An interesting feature is that users of older machines may render scenes in the AGA modes and save them to disk without viewing them. Hence you don't have to have an AGA machine to produce stunning images.

There are provisions to render DCTV images in three or four bitplanes, as was

present in version 2. *Scenery Animator* 4 can also save in PCX mode.

Loading 3d objects into SA4

Adding 3D objects to a landscape program is a major breakthrough. The format of the objects must be Videoscape-3D GEO ASCII. A couple of programs can convert other more standard 3D formats to Videoscape. *Pixel 3D Pro* and *Interchange* will do the trick.

Several object samples are included with the program: white flower, lunar exploration module, highway, stealth fighter, starship, balloons, stars and constellations.

Objects may be scaled up or down in size, and a resized and rotated object may be saved as a new object. You can rotate and animate objects as well. Objects such as planes may be given a "speed", pitch and direction independent of the animated camera position. Hence you may create an animated cruise over a landscape whilst a jet zooms past you heading off somewhere else. Or perhaps a scene with several hot air balloons each of which floats off on its own path.

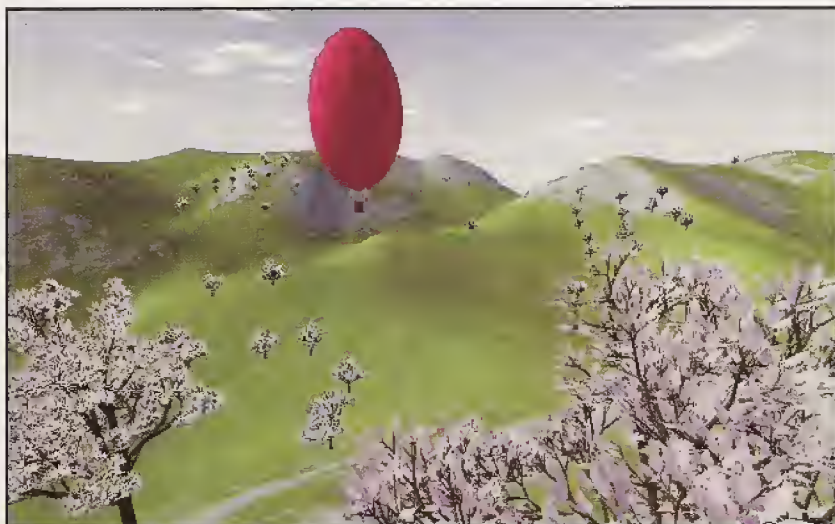
There is an opportunity for some pretty surreal images here; perhaps a flock of flying pigs or a giant pink elephant!

In 16, 32 and 256 colour modes objects are rendered in shades of grey; otherwise they assume their colours from the original .GEO file colour code.

Animations

Making animations has always been *Scenery Animator*'s strong point. The built in keyframe animation editor is powerful and intuitive, and advanced colour dithering and shading in low colour modes allow long animations to be made with minimal memory required.

To make an animation using the key frame method, simply define a few frames as reference points or "signposts" on your map. These points will be the "key" (or important) frames through which your animated camera must pass. Then you decide how many frames you want to have in your animation and use the "Xpand" button to distribute them evenly amongst the keyframe path. Choosing the



"curve" or "Lp" options will allow you to create smooth Bezier curve paths or loops for a more realistic effect.

There are so many things to animate in SA4. Not only can you fly across your landscape, but you can animate the cloud position, altitude and density; a rising or falling ocean level; the movement of the sun across your 'scape; the height of mountains or depth of valleys; objects with separate flight paths; camera focal length and view direction. Several effects can be combined to generate anims of great complexity.

The cloud animation facility is particularly powerful. It is possible to send clouds in any direction across your sky at any speed, and make them expand and contract at will with the cloud density requestor.

Animating the light direction will give the impression of time lapse photography - a rapid transition between night and day. This concept is enhanced by rapidly moving clouds.

Now for a grand finale: imagine a dusk scene with moving clouds signifying windy conditions. A few lightning flashes could be simulated by using bright overhead lighting momentarily. Then, with judicious use of the vertical elevation factor, your landscape breaks apart as mountains soar out of the plains. As an afterthought, perhaps a tidal wave could swamp the lower plains courtesy of your ocean level control. It is easy to create virtual movies with *Scenery Animator 4*. Just let your imagination fly.

In this version of *Scenery Animator* the auto-banking algorithm has been improved, allowing for smoother transitions when cornering in flight. Without banking, curved animations are less realistic.

Australian DEMS?

Making Australian DEM files to supplement the included American ones is laborious and requires the purchase of a scanner. You have to scan a portion of the map, alter the colours in a paint program, then convert it with a program like

Scapemaker or *Vistapro*.

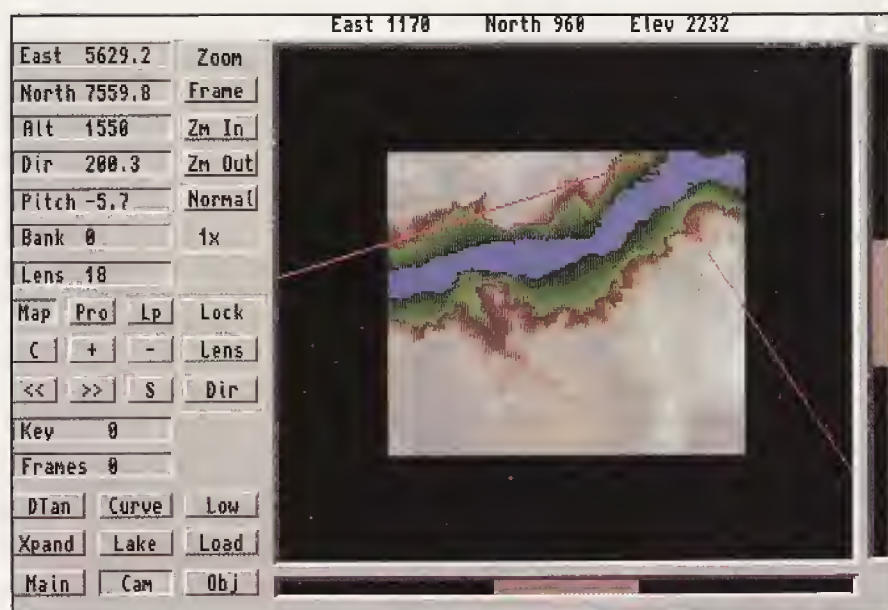
Australian government mapping departments are in the process of converting all topographic maps from graphic to digital form. They can produce a variety of datatypes including the "ASCII Pen XYZ" format, but not USGS (US Geological Survey) DEMs.

Conclusion

I think you may have guessed that I enjoy using *Scenery Animator 4*. I prefer it to *Vistapro* because of the smoothness of the rendering quality, its memory efficient 32 colour mode for long animations, the ease and versatility of its animation system and the ability to incorporate objects into landscapes. In addition, there is a cost incentive in SA4's favour because *Vistapro* is not bundled with its animation offside, "Makepath".

I use *Vistapro3.0* as well because it has its own relative strengths. There are a greater number of variables to consider when rendering in *Vistapro*. You have the option of altering the haze level, the roughness of the landscape, and additional tree varieties. For rendering single pictures *Vistapro3.0* comes out ahead, but if animation is your game then *Scenery Animator 4* is the clear winner. □

Creating animations is assisted by a topographical map complete with a view angle



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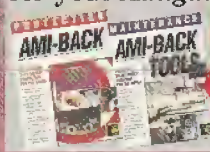


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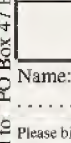
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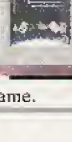
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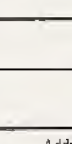
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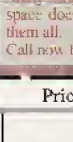
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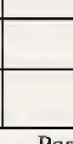
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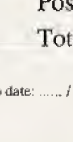
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Upgrading Fat Agnus

*Michael James explains how
to upgrade your graphics memory*

Fat Agnus is one of the Amiga's custom chips and it is he who handles the graphics memory as well as a variety of other jobs. Usually, 1Mb machines come with 512K of Chip (Graphics) Memory, and 512K of Fast (CPU) Memory. But, by replacing your existing Agnus and/or making some very simple modifications to your Mother board, you can upgrade your machine to 1Mb Chip memory. This will allow larger sound samples, more colours at higher resolutions for graphics applications etc.

Upping your memory

The modification that I am about to explain is NOT for the fainthearted, and will (usually) only work with A501-type 512K memory expansions. If you don't have one of these memory expanders, then cheek with your supplier first. Remember, if you feel that you can't do this operation, just take these instructions along with your Amiga to a local electrician or Amiga repair centre.

Before you begin the modifications, you should check to see whether you have the Fatter Agnus already installed and working. To do this, load up Workbench, double click on the Shell icon (CLI for 1.2 users), and enter:

AVAIL

For example, for my setup (1Mb Chip, 2Mb Fast), I will see something like ...

TYPE AVAILABLE IN-USE MAXIMUM
LARGEST

chip 860840 186712 1047552 851720
fast 1156512 940640 2097152 833424
total 2017352 1127352 3144704 851720

The figures you see are your total memory in bytes. If your chip memory is like mine, 1047552 or above, you do not need to preform your modification as you already have 1Mb of Chip ram. If however, yours is 524288 or something in that region, then you only have 512K of Chip ram and can go on.

If your machine is a fairly recent model (Kickstart 1.3 and above) with 1Mb, but no Trapdoor expansion, it might still have a Fat Agnus, but the board may require small changes to get 1Mb Chip. There are two ways to find out. 1) Get a system information utility such as *SysInfo* from a PD library or 2) Get out an alan key and pull your machine apart and look at it.

Here is a list of tools you will need to do the job.

- The 8372A Fatter Agnus (available from most Amiga stores)
- One set of jeweller's screwdrivers
- One small crosshead screwdriver
- One Torx No. 10 screwdriver
- Long-nosed pliers
- A sharp craft knife

- A small soldering iron (17W)
- A clean earthed table or desk
- An ESP wrist strap
- The lid from a coffee jar or an old tin

You should allow about an hour to work on this. Take your time and remember, be careful. If you should break something, then the computer is no longer covered by warranty. Take a deep breath, and let's go!

1. Switch off your Amiga and remove all the peripherals.

2. Place the Amiga upside down on the workbench and remove the six fixing screws - three along the back and three along the front. These screws may be crosshead or Torx type. The Torx type can be removed with a flathead or jeweller's screwdriver. Be careful, and do not use a normal crosshead. Place all the screws in the lid so they don't get lost.

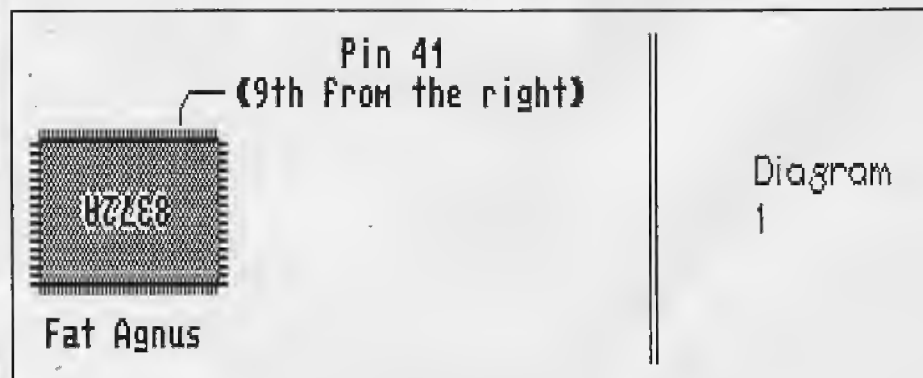
3. Gently remove the upper casing by lifting it from the disk drive end, being careful that you don't catch the case on any of the keys.

4. Remove the keyboard connector by gripping the plug with pliers. Don't pull it by the cables. If it won't budge, then try rocking VERY gently from left to right.

Put the keyboard to one side. You may want to take the opportunity now to clean the keyboard.

5. Remove the four screws that hold the metal shield in place and lift the four lugs that are located around it with a flatblade screwdriver - don't use your fingernails. The metal is sharp (I found this out the hard way)!

6. Have a look at the Agnus chip. It is the large square one with Agnus or Fat Lady written around it somewhere on the mother board. On the chip, it should have



some numbers on it. If the number is 8372A then don't buy the Fatter Agnus as you already have it, then skip to **MODIFYING THE MOTHER BOARD**.

If you have a PLCC (plastic leaded chip carrier) extractor, you can remove your Agnus now and go to **FITTING FATTER AGNUS**. If not, then please read the following.

Removing the Motherboard

7. Remove your A501 type memory expansion. This avoids strain when the Motherboard is taken out.

8. Remove the disk drive's power and IDC connectors from the Motherboard.

The IDC is usually hard to remove, and may need gentle leverage from a fine flat-blade screwdriver.

9. Lift the machine on its edge and remove the three screws that form a "L" shape near the disk drive. Hold the disk drive firmly whilst doing this as these screws hold it in place.

10. Looking at the machine from the front, you should be able to see a single screw on a pillar near the disk drive. Loosen, but do not remove this screw. You should now be able to lift the whole drive right out.

11. Looking from the front again, find the Motherboard securing lug. This is a small plastic catch about 12cm from the left.

Insert a small flat-blade screwdriver in the slot underneath the case and push the lug towards you. Now very carefully, lift the Motherboard out of the case and put the case to one side.

12. Using a jeweller's spanner or a small sprocket, remove the 12 nuts that secure the peripheral sockets to the shield. You could also use a pair of pliers.

13. Remove the lower shield from the Motherboard and place it aside.

14. Underneath the Motherboard you will see two small holes surrounded by a square of solder-pads. This is the bottom of Agnus.

Push the long nose pliers into the holes and pop Agnus from its socket taking

note of what angle the old Agnus was at. It should be either upside-down or at a 90 degree angle.

15. Replace the bottom shield and screw the nuts back into place.

Replace the Motherboard in the case and snap it into place.

Fitting Fatter Agnus

16. Your new Fat Agnus chip will have been supplied in foil wrapper, remove it and study it for a moment. Try not to touch any of the pins. Pin 41 should actu-

Disclaimer: Not for beginners

If you have no experience with electronics, or the right tools, we don't recommend attempting this project. You could seriously damage your Amiga if you do something wrong, and will void your warranty. If you do attempt it, take care to follow the instructions carefully.

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Cut this track



Expansion Connector

Diagram
2

ally be missing or bent back. This means that it is ready for the Australian market. ie: it is configured for a PAL system display.

If it isn't missing or bent back then you will have to do it yourself by following the next lot of instructions. If you don't, your Amiga will be stuck in NTSC (200 lines opposed to our 256 lines) mode.

Counting in from the right, pin 41 is the ninth one. Bend it back and wrap a small piece of insulating tape around it. DO NOT CUT IT OFF. If you cut the wrong one, then the whole chip will have

to be replaced. See the diagram for more information.

Now push the Agnus chip firmly into the socket making sure that it is at the same angle as the old one was.

Modifying the Motherboard

17. Next thing is locate a jumper JP2. It's a trace of solder between three pads near the CPU (68000). It should be clearly marked. Using a knife, cut the jumper, and solder the other two pads together.

18. If you have a revision 5 Motherboard the next part is hard. Just take your time. Have a look at the second diagram and locate the four tracks near the top edge of the trapdoor expansion connector. You can see which one it is because it ends in a blob of solder opposite the eighth pin-pair on the expansion connector (counting from the top). Make a small nick in the track being careful not to damage the others. Those with revision 6A or above Motherboards, the operation is a lot easier. Just locate jumper JP7A and cut it.

19. That's all there is to it. Just put everything back together in reverse order, switch on and check you have 1Mb Chip. If nothing happens when you turn it on, or if you have lost your FAST Ram and not gained your CHIP ram, then turn the computer off, and check everything.

Note: If it does work as it should, then you will have no FAST ram, and 1Mb Chip ram (unless you have an external RAM expander such as Memory on a Hard Drive). □

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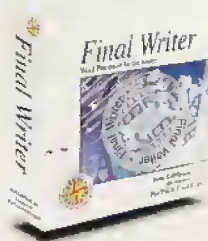
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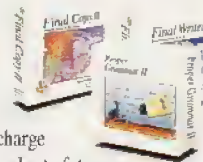
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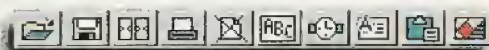
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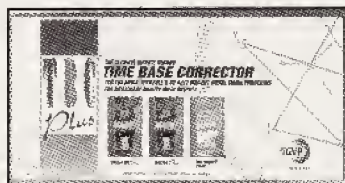
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Fun at Sideshow Alley

by Greg Abernethy

Sideshow Alley is a single-player game revolving around a visit to the local show. It brought back memories of my misspent youth hanging around the stalls trying to win a teddy bear on the duck shooting, or getting a hoop around the ten-dollar note. I still haven't seen anybody do it.

You are given five dollars spending money, and must win five teddies or more to get a teddy bear certificate of achievement. (The certificate can be printed out in full colour.) There are four sections to the game;

Puzzle Towers

- this section is the old *Towers Of Hanoi* with a twist. The lower levels are reasonably straightforward, but you can also select to have number ranges displayed on the blocks. This makes your job a bit harder, as the blocks must appear in the correct ascending numerical

order on the third peg. There are five levels of difficulty and several number ranges to choose from. I found it quite challenging at the higher levels, as some combinations required more than 80 moves to place the blocks correctly.

Shooting Gallery

My favourite. You have 25 shots at the targets. It sounds easy, but you must shoot the target that has the equation that matches the number moving across the screen. The lower levels were easy, but once again it became very challenging at the higher levels. There is a choice of Addition, Subtraction, Multiplication or Division. This game provides a fun way to improve a student's calculation speed.



the number sentences as it took a certain amount of thought before deciding which numbers to try to land in.

Ring that Bell

This game is a straightforward drill and practice program where you must answer ten to 40 equations correctly to ring the bell and win a teddy bear. You can also race against the clock, by setting a time period for answering the questions. There are several levels of difficulty, and a large range of times to choose from. It also includes the facility to print out worksheets of equations and also answers,



if required. This is very useful for remedial tests and off-computer activities.

Wrap-up

Overall, I found *Sideshow Alley* very good for providing a fun environment to learn mathematics. There is plenty of sound, animation and colourful graphics as well as a clean, easy to use interface. The ability to print worksheets is also very good. The Puzzle Towers section can become quite tedious but I found the other three sections entertaining, and also the fact that I won six teddy bears and got a TEDDY BEAR CERTIFICATE for my troubles was an added bonus. It is proudly displayed, with other artistic works from my children, on my corkboard.

For more information on this program, and for details on ordering contact Rush Software on (042) 342107.

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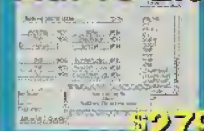
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STAN NIRENBURG

BASIC Strings and Things

Hello again and welcome to your monthly Blitz column. This month we will be bringing up the beginners, by focusing on some frequently misunderstood Blitz commands and features, as well as their application and requirements within your Blitz code.

Strings

A string is a collection of characters coming under the one variable name. You might like to think of it as a character array. Strings are used to hold names, text, commands and anything else where letters instead of numbers are required.

An example of allocating a string would be `A$="Hello"`. Blitz stores the letters one after another in memory, and remembers that you called them `A$`. The `$` sign tells Blitz that you are working with a string, as opposed to a normal variable that only holds numbers. Although you don't have to tell Blitz how long you want each string to be before you assign its value, Blitz does need to know the longest string you will use, and this is

declared in TED's compiler menu, under the heading "OPTIONS". There's a gadget labelled "STRING BUFFER" in which you should enter a value greater than the number of characters your largest string would ever contain.

Chapter 6 of the manual is full of all the commands and functions that you can perform on strings. In addition, you can locate the address in memory that a string is stored in, using the `&` prefix. An example of this: `address.l=&A$`. Remember that an Amiga memory address is always a long word, so you should make any variable containing an address a long word type.

At this returned address, you'll find the ASCII values of each character in the string are stored sequentially in memory, with a zero marking the end of the string. Blitz stores its strings with a zero at the end of them (null terminated). As the system usually likes its strings stored this way, it's quite safe to pass the system your string's address when using external system commands, for example:

```
Function Return SetComment_ (&filename$, &comment$)
```

If after having called a system function, you are being returned a string, then you can load this into a standard Blitz string using the `A$=Peek.s (address.l)` command. This will load `A$` with the null terminated string located at that address in memory. If, for some reason, you need to load a Blitz string with a string which isn't null terminated, or only a portion of a standard string, you can use the special `Peeks$(address,length)` version of the command. This will only load the number of characters you specify into your string.

Labels

A label is simply a name for an address in memory. Labels are used by Blitz's compiler to locate the area in memory you are referring to. You can find out the actual memory address a label has using the `? command`. For example:

```
a.l=?loop : Nprint "Address of label <loop> is ",a.l
```

Labels have many different uses and applications. They could be used to redirect program flow, as for example, in a `GoTo <Loop>` where `<Loop>` is just the name with the code that you want the processor to resume executing from.

Another use for a label could be to locate some data in memory. For example, if I needed to pass a tag list to a system call, I could set up the data in memory using the `Dc.l` command, then use a label to point to this data, passing the address to the system call. Example:

```
Reqtags: Dc.l $8000 0014,$0000 0000,$8000
000B,"_",$8000 0003,$0000 0000
Title Pointer Underscore Centre End
```

The address of this data is found by `address.l=?Reqtags`.

One trap to remember with labels, Blitz and `Dc.l` commands is that Blitz reserves the right to, and does, place its `Dc.l` data anywhere it wants to in memory. Don't assume that they will lie sequentially in memory! So always use a label for each consecutive `Dc.l` statement to correctly locate it.

Don't attempt to make reference to a label that lies outside a procedure, when within a function or statement. Blitz handles its memory and addresses differently within these and needs to separate variables and code segments to allow recursion. (Recursion is the amazing, useful and confusing ability for a procedure to call itself!)

This month's handy function for your includes directory is another DOS function which enables you to perform a standard AmigaDos Copy command. You can duplicate files, or move them around using this. It's light on assembler commands, but has many Amiga system calls, and is a great example of passing string addresses to the system.

by Roy Hurley



```
; DEFTYPE.I
; Remember to use at the top of your code for system stuff!
; COPY {source$,destination$}
; Duplicates the source file as destination, just like Dos
```

```
Function COPY (source$,destination$)
  key=Lock_(&source$,2)           ; Try Locking source
  If key>0                         ; Check to see if it exists
    mem=AllocMem_(260,1)          ; Allocate Fileinfo block
    If mem>0                       ; Check for success
      Examine_key,mem             ; Fill the Info block
      FileLength=Peek.L(mem+124)  ; Examine length of file
      FileAddress=AllocMem_(FileLength,1) ; allocate memory for it
      If FileAddress>0            ; Check for success
        hand=Open_(&source$,1005) ; Open source file
        If hand>0                ; Check for success
          bytes=Read_(hand,FileAddress,FileLength) ; Read whole file!
          If bytes=FileLength     ; Check for success
            newhand=Open_(&destination$,1006) ; Open destination
            If newhand>0          ; Check for success
              newbytes=Write_(newhand,FileAddress,FileLength) ; Write file!
              Close_newhand       ; Close destination
              If newbytes>0        ; Check for success
                result=-1          ; Return ok result
              End If
            End If
          End If
        Close_hand                ; Close source file
      End If
    End If
  End If
```

```
FreeMem_ FileAddress,FileLength ; Free source file memory
End If
FreeMem_ mem,260                 ; Free Fileinfo memory
End If
UnLock_key                       ; Unlock source
End If
Function Return result           ; Return result
End Function
```

```
; Example usage:
; If COPY {"Ram:pic","Ram:T/Pic"}
;   NPrint "File Copied ok!"
; Else
;   NPrint "Error copying file!"
; End If
; MouseWait
```

That's it for this month. Please feel free to send me any feedback or questions to either Box 1420 Wollongong NSW 2500, or for the BBS literate, POWERHOUSE BBS (042) 616380/622170 14.4k 24 hours.

Also, there's a fairly active Blitz international echo on Amiga Connection (02) 970 6444 14k4, 24 hours, which gets about 60 messages a week from Blitz users all around the world. Simon Armstrong himself lurks on-line here, so there's an ideal opportunity to use/abuse the co-creator of Blitz!

Blitz on, dudes!



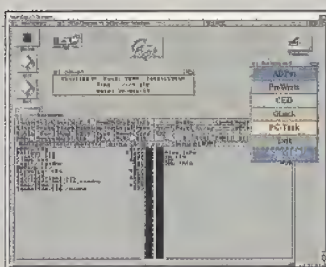
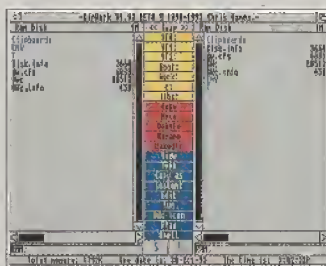
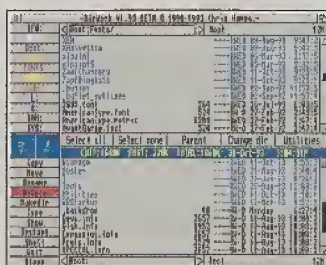
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Working with AmigaDOS

by Greg Abernethy

Beginning from this month, I will be concentrating on how to use specific commands in CanDo correctly and some tricks and tips with various features of CanDo. If you have any problems with CanDo or need help with any aspect of CanDo, write to me at 78 Goolagong Street, Dapto, 2530. Please include a stamped, self-addressed envelope. I will reply to all letters and include reader's problems in future articles.

No .INFO!

Trevor Parker, from Ballina, was having trouble removing .info files from a directory listing in a custom file requester he had designed. The .info files are useful for the graphic user interface of the Amiga, but are a real pain when shown in a file requester. They can effectively double the size of a directory list, and look untidy. With earlier versions of CanDo, the standard CanDo file requester is too small, and often I have clicked on the .info file for a file, by mistake, and had a "WRONG FILE TYPE" error appear. The routine listed below will solve this problem. The routine references a document called "Dir". Change the document name to match your document name. This routine will also display a correctly sorted directory and file listing.

```
WorkWithDocument "Dir"
Clear DOCUMENT
InsertDirectoryList DIRECTORIESONLY
SortDocument
Delete CHARACTER ,1
MoveCursorTo STARTOF DOCUMENT
Let n = LinesInDocument
If n > 0
  Let x = 0
  Loop
    Let x = x + 1
    PositionOnLine x
    If TheLine <> ""
```

```
      MoveCursorTo STARTOF LINE
      Type "(Dir)"
    EndIf
  Until x = n
EndIf
MakeDocument "Work"
WorkWithDocument "Work"
InsertDirectoryList FILESONLY
Delete CHARACTER ,1
MoveCursorTo STARTOF DOCUMENT
Let n = LinesInDocument
If n > 0
  Let x = 0
  Loop
    Let x = x + 1
    PositionOnLine x
    Let lin = TrimString(TheLine)
    Let len = NumberOfChars(lin)
    If GetChars(lin, len - 4, 5) = ".info"
      Delete LINE
      Let n = n - 1
      Let x = x - 1
    EndIf
  Until x = n
EndIf
SortDocument
MoveCursorTo STARTOF DOCUMENT
If TheLine = ""
  Delete LINE
EndIf
WorkWithDocument "Dir"
MoveCursorTo END OF DOCUMENT
NewLine
InsertDocument "Work"
MoveCursorTo STARTOF DOCUMENT
If TheLine = ""
  Delete LINE
EndIf
Flush "Work"
```

Explanation:

The command "InsertDirectoryList" is used with the DIRECTORIESONLY keyword to insert all the directories in the current directory into the document. The directory names then have "(dir)" added to the end of them, to differentiate them from files. It would be nice if multiple colours could be used for text in a document as this would alleviate the need for marking the directories in this way. A

document called "Work" is created and the FILESONLY keyword is used to insert all files in the current directory. The files are then scanned to see if any files end with ".info", in which case that line is deleted from the document. The counter "x" is decremented by one, to position the pointer on the correct line. Also, the "n" counter is decremented by one, as the number of lines in the document has decreased. After checking all lines in the document, the list is sorted, and inserted into the "Dir" document under the directory list. The "Work" document is flushed, to free up memory it was consuming, and the directory listing, without the ".info" files, is ready for display.

Using "GETCHARS" Command to Scramble Words

The following routine uses the GETCHARS and NUMBEROFCHARS commands to find the number of letters in a word, insert the letters into an array, and then produce an anagram of the word.

```
Let Anagram = ""
Let Scramble = "Disestablishmentarianism"
Let n = NumberOfChars(Scramble)
Let x = 0
Dispose temp
Loop
  Let x = x + 1
  Let temp[x] = GetChars(Scramble, x, 1)
Until x = n
Let x = 0
Loop
  Let x = x + 1
  Let s = Random(1, NumberOfArrayEntries(temp))
  Let Anagram = Anagram || temp[s]
  DeleteArrayEntry temp, s
Until x = n
Dispose temp
SetPen 1
PrintText "Original Word : " || Scramble, 60, 30
PrintText "Scrambled Word : " || Anagram, 60, 60
```

Explanation:

The word is placed into an array, letter by letter, using the GETCHARS command, and then letters are selected at random from the array, and added to the Anagram string. The original string and the scrambled string are then displayed on the screen.

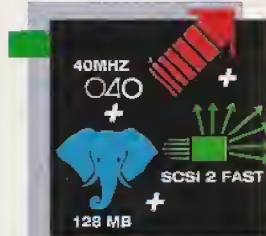
That's all for this month. Next month I will have some more useful routines and hints and tips. Please send me any problems or suggestions to the address above. Goodbye till next month. □

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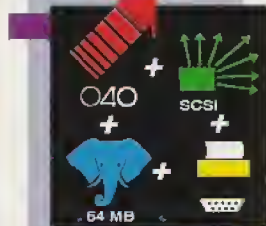
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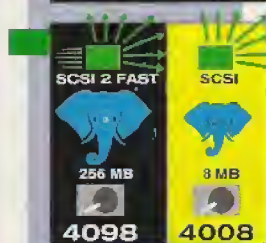
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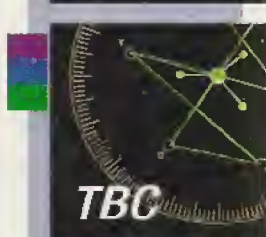
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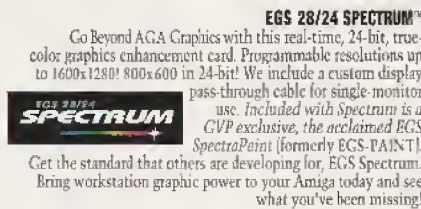
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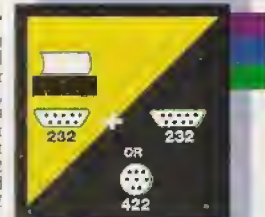
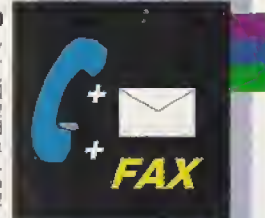
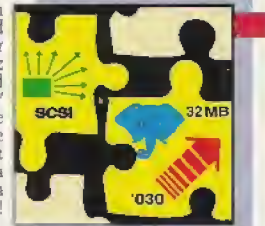
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A Little Green Piece

by Graham Bowden

My good wife, dear and gentle readers, is one of those week-end gardeners who loves tending her plants but often requires what she terms "a little male might" to carry out certain tasks. I was sitting in my computer alcove recently, doodling away at *Deluxe Paint* when she who tends the garden struggled by the window with a large plant in tow. She smiled in at me and uttered a charming invitation aimed at gaining my assistance. "Might my male move his male might out here a moment?" she said. Being sound of mind and limb and desirous of eating that night, I was happy to oblige.

Thus was my afternoon spent in the garden, planting a palm here and a perennial there while at the same time removing unwanted thorns and thistles. During the course of this forced labour it occurred to me that some of the specimens I was handling would make excellent *Deluxe Paint* subjects if only they could be drawn quickly and easily by we prosaic painters. One in particular seemed to be an excellent proposition and on this I dwelt.

A particular leaf

The subject plant possessed leaves like an elephant's ears perched on delicate orange/green stems. In fact, apart from a little artistic licence, it looked a little like the specimen in Figure 1 which, I'm happy to say, was really quite simple to draw.

The leaves and flowers are drawn quickly and simply using the Vector tool with Cycle mode selected. The stems are merely

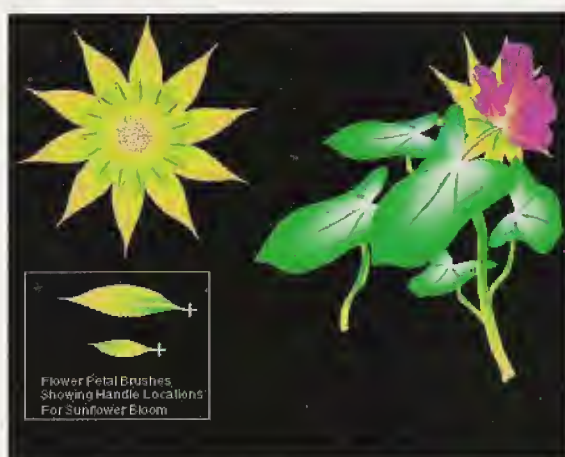


Figure 1

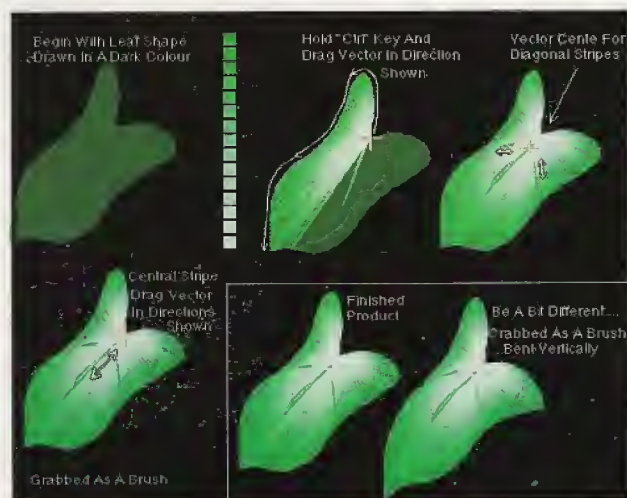
"Con"tour filled shapes. Bear with me and all will be revealed.

Moving on to Figure 2 discloses the method applied in the leaf construction. Draw the leaf outline using the filled free-hand (keyboard Shift-D) tool and a dark green colour. In truth any green colour would suffice here depending on your personal taste in leaf lustre. It may take a few attempts but once an acceptable shape has been created, call up the stencil requester and make a stencil which protects all colours except the green of the leaf. That done use the palette requester (keyboard p) to create a range of greens similar to that shown in Figure 2.

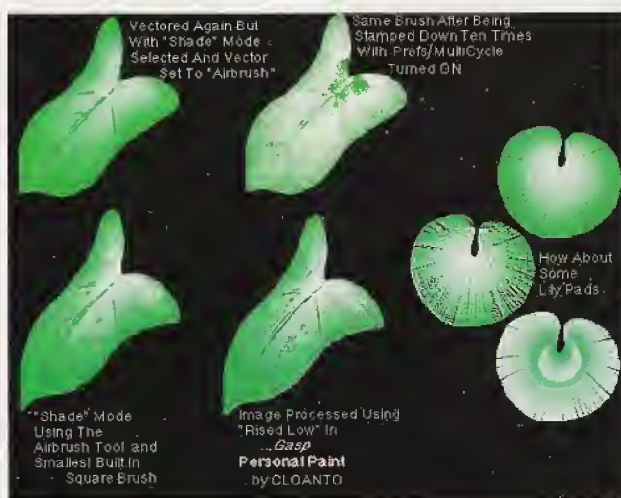
Now, via the Range requester, form these greens into a colour range. The quickest method for range construction is to click on the first colour for the range then hold down the Alt key while selecting the final colour. You'll find *Deluxe Paint 4* and above will select the intervening colours itself.

Next step, hit v to select the Vector tool and F7 to select cycle draw mode. Place the mouse over the apex of the leaf as shown, hold down the Ctrl key and drag the vector around the edge of the leaf as shown in Figure 2. Using a one pixel brush for this exercise may leave a few gaps in the leaf's finish but with the contrasting underlying base colour, this merely enhances the appearance of the finished product.

For *Deluxe Paint 4* and greater owners there is a faster way to shade the leaf though the slightly banded texture of the vectored shading and the striations left behind by the one pixel brush will not be present. This simpler method involves using either "Cont" or "Hi" from the *DPaint 4* fill type requester.



Left
Figure 2

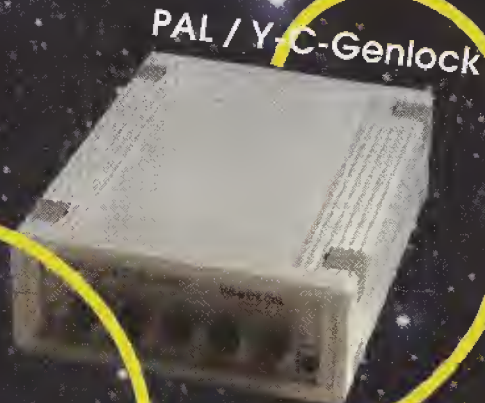


Right
Figure 3

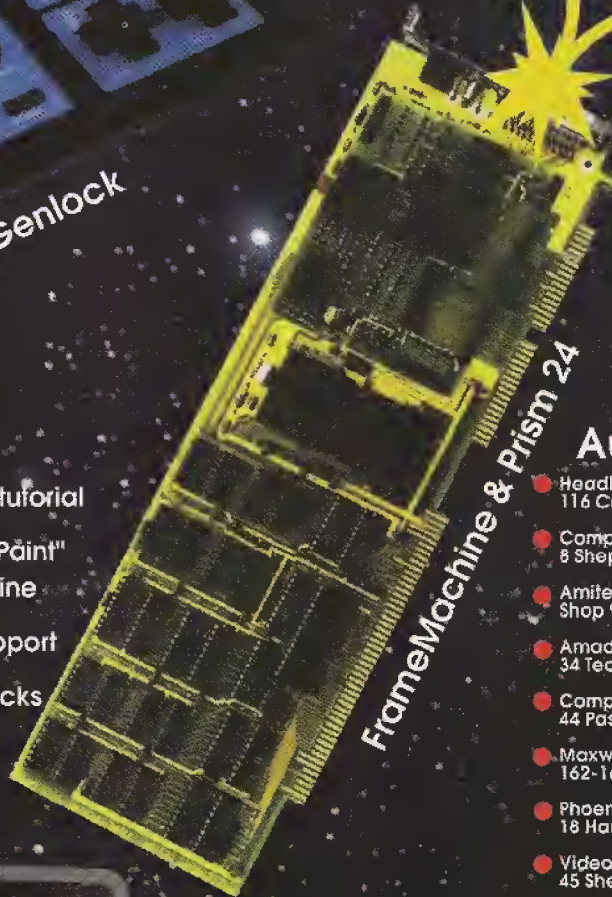
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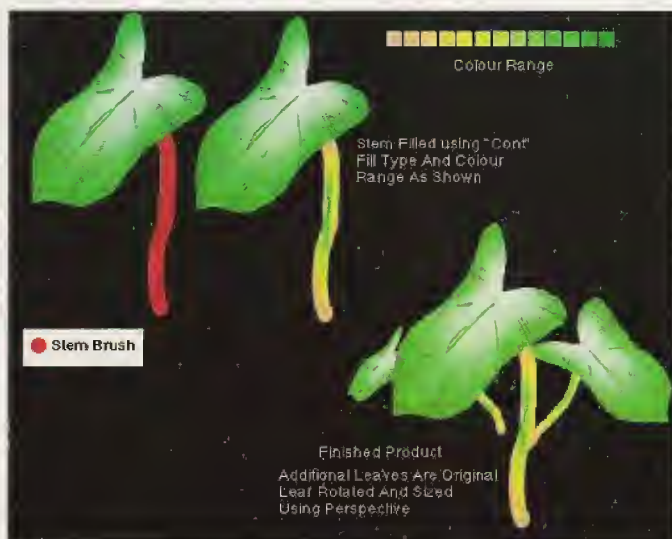


Figure 4

Contour fill

With the range of greens selected as the current fill range and "Cont" as the fill type, select the fill tool (Keyboard f) and flood fill the leaf. *Deluxe Paint* readies itself for the "Cont"oured flood fill then waits for you to indicate the starting point for the shading by attaching an elastic band to the mouse pointer. All the artist need do now is to drag the mouse up to the point shown as the vector starting point in Figure 2 and click the left mouse button. *Paint* does the rest.

By the way, if your colours shade the wrong way - ie. dark to light rather than light to dark - why, just hold down the Alt key and tap keyboard "r" to reverse the range direction and try again.

OK, with the shaded leaf drawn, select the vector tool again, hit F5 to select Shade mode then hold down the Ctrl key and drag a vector up and down the centre of the leaf as shown in the lower left of Figure 2. Additional colour bands can be drawn as desired using this method.

That's it. The basic leaf is finished. Short of dashing out and buying a colour scanner to directly copy a picture what could be simpler? Not to mention cheaper.

Another leaf

But there's more. Like in the box in Figure 2. The leaf here has been grabbed as a brush and, via the Brush menu and Bend/Vertical, has been delicately reshaped. But wait, there's still more. Turn to Figure 3 where the captions tell most of the story. Moving clockwise from the top left the first

leaf used an airbrush about, oh, 5 pixels in diameter with the vector tool set via the vector requester (Shift-v) to Airbrush density 3 and Shade mode active. The vector was dragged around as described for the original leaf shading.

The second leaf utilized *Deluxe Paint*'s multi-cycle feature from the Effects menu. To use this ensure the range of colours used in the brush is the currently selected colour range and the cycle rate for this range has been selected, via the Range requester's Rate box, to a value greater than zero.

I usually just select full scale in the Rate box. This done, hit F7 to switch on Cycle mode and each time the custom brush is stamped down its colours cycle one step through the range which results in the effect demonstrated.

And lily pads

Same method, different shape. The colour range has been reversed and a double vector used to enhance the effect on one pad. The textured effect on the centre pad and the next leaf around used one of *Personal Paint*'s image effects tricks showing that, powerful and fully featured though it may be, *Deluxe Paint* doesn't quite have all the answers. Finally the mottled effect on the remaining leaf used the freehand airbrush with Shade mode as shown. The leaves then, present no difficulties. In fact execution's easy once the method's mastered. The stems - Figure 4 - present even less of a challenge.

Before actually drawing the stems why not stamp a few leaves down to create a full foliaged plant. Use perspective to modify the as-



Figure 5

pect of the leaf brush while stamping it down here and there around the original leaf. That done, create another colour range which can shade from mid orange or perhaps mid red through to darkish green. Make a stencil which allows only the background colour to remain unprotected, grab the largest built in round brush and with Color mode selected, draw a stem onto the largest leaf. Call up the fill type requester, ensure "Cont" fill type is selected and the orange-green colour range is the selected range. Fill the stem while experimenting with different shade centre points. Continue this procedure using different sized brushes for different thickness stems, filling each one separately until all the leaves are stalked.

This is all too easy

The flower is explained in Figure 5. Once again it's a simple vectored shape using Cycle mode and the Ctrl key. Yet another colour range is composed. It's easy to see I'm using *Deluxe Paint AGA*. Owners of older Amigas and/or *DPaint* versions may run short of colours about now. This new range should shade from light to bright in whatever hue you choose. Draw the vectors out as before using a direction roughly as depicted in Figure 5 - or whatever other direction suits your individual whim. The stencil mentioned in Figure 5 is used to allow the later petals to lie behind the larger petals to give the flower some depth. You could save time by drawing the smaller petals first then lay the larger ones over the top and thus bypass the need for a stencil.

Last but not least is the sunflower blossom depicted way back in Figure 1. Its petals were

created using the same tried and true vector method used for the leaves only this time the leaf shape and the colours used are selected to suit the flower. Once drawn, the large petal was grabbed as a brush, stamped down, then reduced in size via the keyboard "-" (minus) key to form the smaller petal. The larger brush had its handle placed as shown and was drawn down through 360 degrees in ten steps using the move (Shift-M) requester. As can be seen in Figure 1, the smaller brush had its handle placed at the "opposite" end of the petal from a colour shading point of view. This brush was stamped down through fifteen steps over 360 degrees to enhance the flower.

Naturally no self respecting bloom is complete until the stamen - the central seed pod - has been added and in this case, and because I like to use all of *Deluxe Paint's* features, a painted stencil was employed along with the airbrush and cycle mode.

Not your usual stencil

Painted stencils as a feature, have never made it into these articles in the past which is surprising really, because they are an ex-

tremely useful tool. Painted stencils differ from their colour lock cousins in their ability to protect a user defined shape rather than a particular colour or set of colours. These stencils are not created via the usual requester. Rather they employ a specially prepared screen which is activated either via the Stencil/Paint On/Off item under the Effects menu or by pressing Ctrl-s.

When activated the entire screen page darkens in preparation for the stencil to be drawn. Any of *Deluxe Paint's* drawing tools may be used to create the stencil including all the standard brushes and the filled and unfilled shape tools.

Custom brushes can also be stamped down to protect their shape alone, regardless of whether the colours in the brush are used elsewhere on the screen or not. Drawing with the left mouse button protects the area covered while the right mouse button unprotects.

A protected area will show up on screen as a lighter area over the darkened background. When the area to be protected has been drawn, select Ctrl-s or the Effects Stencil/Paint menu again to lock it in.

My flower stamen used a simple filled circle in the blossom's centre as the protected area. But hang on. This exercise needs the flower's centre to be unprotected. Not a problem. Select Stencil/Reverse from the Effects menu and everything's sweet.

Now make up yet another small colour range (isn't AGA wonderful) for the stamen's pin cushion appearance. Select a one pixel brush, the airbrush tool and cycle mode and spray down the pollenated centre with no worry about colouring outside the lines.

And that my precious Picassos, is that. There is but one minor problem with my artwork though. According to She who tends the garden, flowers do not spring from dieffenbachias, which is apparently what my piece of flora roughly represents. I explained that artistic licence allowed for these small aberrations and shouldn't she be monitoring the rug rats currently tossing dishes about the double bowled kitchen sink. She who tends the garden is really a multi sink monitor when it comes to wash up time.

Ciao ... Graham.

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New Fish, plus Mand2000D

It's Fish time again. Fred Fish's disk output hiccupped a bit as he came to grips with the logistics of releasing his excellent Fresh Fish CD-ROMs. Now they are up to disk 950 and the contents are as good as ever. As usual, highlights follow:

Fish 931 DynamiteWar

Ever play a Bomberman game? You know - little dudes in a grid of squares, planting bombs to grab bonuses and fry the other guys.

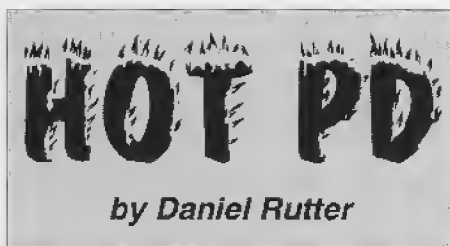
This an excellent shareware version, which can accept input from up to five human players (no special adaptors needed), in which mode it is about as good as simple multi-player games get.

On the downside, there's no computer opponent, so without a friend you're in for some boredom. (This game also appears on Prime Artifax Hot Games 12)

Fish 932 Fleuch

Another one of my favourite games, the original *Fleuch* on Fish 760 had you cruising around a blocky but smoothly animated two dimensional world of caverns and gun turrets in a weeny spacecraft, aiming to pick up a ball at the bottom and return, doing many bizarre pendulum tricks on the way back and toasting the bad guys on the way.

This is v2.0, and adds more levels in different orders, and a rather cheesy theme



tune. If you like "classic" games - I, believe it or not, do - you'll love *Fleuch*.

Fish 933 GuiArc

This is v1.22 of this graphical user interface for CLI-based archivers like LhA, ARC, APE, ZOO, etc. It looks like a directory tool and can perform all basic actions on archives, such as Add, Extract, List, Test, Delete, etc. You can enter archives as if they were directories, and you don't have to know anything about archivers, which are pretty ferocious animals for the beginner. The catch is that the archivers aren't included, and you need AmigaDOS 2.0+.

You can get LhA, by far the most common Amiga archiver, on Fish 715 or a slightly more recent version (1.38) just about anywhere. ARC's on Fish (wait for it) 70, ZOO on 753.

Fish 934 ABackup

It's another update (v4.03) to this very powerful shareware backup utility.

ABackup's got a full Intuition interface, a batch mode, it can handle HD floppies, use any external compression program, and, lots more. This new version adapts itself to the default font and screen mode, and runs up to 40% faster than previous versions.

AZap

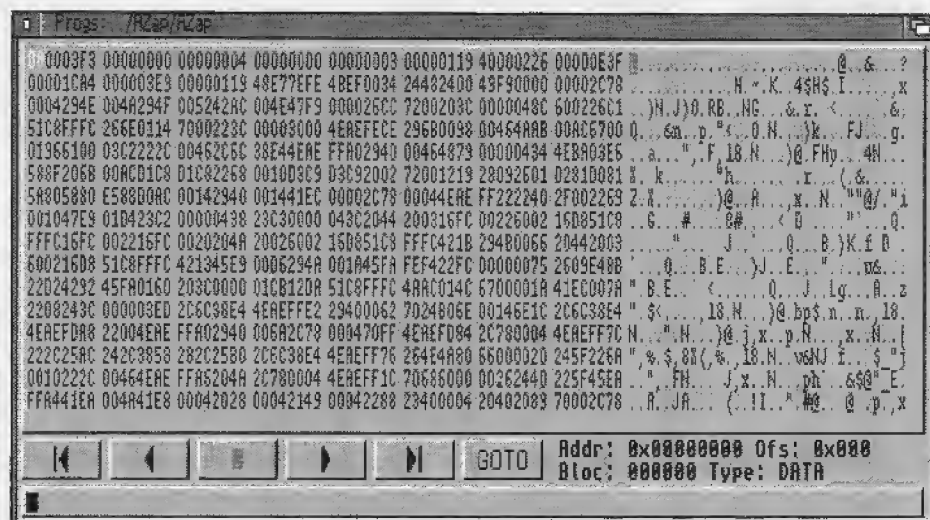
Earlier versions of *AZap*, a powerful binary editor able to edit files, memory or devices like floppy or hard disks, were somewhat infested. I've taken more than a few calls from people stuck with *AZap* 1.00, which has a tendency to get awfully confused and mysteriously fail to open a window. This one has rather less tiny live-stock, but amateur users should remember that high powered binary editors make it very, very easy to make your system eat itself from the bum up. If you start editing your hard drive, you take your data's life in your hands!

Fish 935 AmiCDROM

Amiga CD-ROM file systems let you plug any SCSI CD-ROM drive into your hard drive controller and use it like any other device. Unfortunately, most of them are commercial and a tad expensive - who wants to pay another \$80 on top of the price of the drive?

This is where *AmiCDROM* comes in. It's free, and includes full source for programmers, and it supports the ISO-9660 standard and the Rock Ridge Interchange Protocol.

AZap





GuiArc

MuchMore

If you've got any of the Fish disks since, oh, about 250, you'll have seen *MuchMore*, the text displayer Fred's used for yonks. It's got quite nifty scrolling, built in help, XPK compression support and acceptable search and print functions; it works with any screenmode and it's only about 23k uncompressed.

Boring, but useful if you want a better document displayer than the very basic Commodore *More* program.

Fish 936

TKEd

TKEd is a shareware Intuition-based ASCII editor. It can read texts packed with *PowerPacker*, has user-definable menus, 116 AREXX commands, an interface to some errortools for programmers, macros, undo, wordwrap, folding, online help, and many other features. It's Kickstart 1.3/2 compatible, supports ECS screenmodes, an application window and checks itself for linkviruses. This evaluation version can't edit files longer than 9999 lines, but it's otherwise intact and so worth a look.

Fish 937

KingCON

I like to hide the Commodore Shell under CShell, the monster UNIX-ported supershell whose features are high endless. I've got a new version of CShell, actually, and will mention it next month, but if you're not ready to go for such a giant then

KingCON could fit the bill. It's a console handler that optionally replaces the standard 'CON:' and 'RAW:' devices. It is 100% compatible, but adds some VERY useful features, such as file name completion with the TAB key, a review buffer, Intuition menus, jump scrolling, cursor positioning with the mouse etc.

The scrollback for the shell is the funkiest feature in my opinion, but the command completion's pretty nifty too; hit tab with no leading letters and *KingCON* gives you a file requestor! I think I'll have a go at integrating this puppy with Csh ...

Fish 938

Filters

Resistor-capacitor or RC filters are one of the most basic electronic subsystems, with about as many applications as wire. *Filters* is a shareware RC filter design program, which allows you to set the desired characteristics for either a high or low pass filter, calculate the required values, and display or print the resultant phase/frequency graphs.

Fish 939

AlertHelp

Ah, the guru message. It's not called that any more in WB2 and above, but that's what we still call it. *AlertHelp* is a little tool that helps you to interpret both red and yellow alert messages, or, as they're more commonly known, guru and banana meditations. When an alert occurs, the program

displays a window with a little description of the alert. It won't make the situation any better, but it will make it less cryptic.

ARexxSuper

ARexx is the Amiga's somewhat user-vicious but hugely powerful scripting language, with which you can tie together all sorts of programs. ARexxSuper is an all purpose shareware mouse controlled ARexx communication program, with a nice interface. It's useful for testing and debugging ARexx interfaces. Requires reqtools library V38+ and Kickstart 2.0+, but if you're into ARexx you'll naturally have both anyway.

CloseWB

This program attempts to close the Workbench screen after "n" seconds. It is useful to put into startup-sequences that start an application and no longer need the Workbench (such as *Imagine*). Closing the Workbench screen saves some chip RAM. CloseWB will work with any Amiga running KickStart 2.0 or higher.

ExtraCmds

AmigaDOS is a sort of bonsai UNIX. Imagine all the trials you've gone through learning AmigaDOS - or all the trials that put you off trying - and multiply by ten, and you've got UNIX.

Naturally, UNIX is also more powerful. For this reason, various stuff exists to make your AMiga behave more like a UNIX machine, such as the above mentioned CShell. *ExtraCmds* is the same sort of thing - a set of 18 AmigaDOS 2+ commands. This is the second public release, and consists of the commands Common, Compare, Concat, Copyright, Count, DirTree, Find, Head, Lower, Prepare, SCD, Split, Splitname, Tee, Testbits, TimeCom, Unique and Usage. Experts only.

Fish 940

AltTab

Ever used (lowers voice) Windows? This risible excuse for a graphical user interface lets you swap tasks by hitting alt-tab, and if you're unlucky enough to have used it very often then the alt-tab twitch may become a habit.

If it is, this commodity (that's right, WB2 again) duplicates it on your Amiga. Not a lot more to be said, really.

Fish 941 CardZ

A set of rather ugly but interesting Patience card games. Includes two versions of Klondike, The Wall and Up/Down, each more puzzling than the last. It's Freeware, and worth the price of a Fish disk.

Guide2Doc

AmigaGuide is Commodore's hypertext format, which works rather well for quick navigation around documents. But what if you don't have it, or can't fit it on a distribution disk? How do you convert an AmigaGuide document into something not spattered with "@{xxx}"'s?

Guide2Doc does it. It's a CLI utility that takes an AmigaGuide document and sculpts it into plain text, which you can send to a file or the printer. If you like you can set a page length, and have a table of contents built at the end!

SOUNDEffect

None-too-stable shareware sound sample editing program. Special features include temporary buffers, frequency and amplitude modulation (tremolo and vibrato), echo, special reverb effect, chorus effect, mixer, freehand editing, low and high pass filter, compressor, expander, limiter, distortion and all the usual functions (copy, paste, insert, cut, looping, zooming etc). All effects are available in stereo.

SOUNDEffect tends to crash a bit on my machine - try it on yours for a while before you send the author any money.

Fish 942 LibraryGuide

This excellent AmigaGuide file lists about 170 different libraries often found in the LIBS: directory and a simple one or two line description of their purpose along with version info and where to get them, etc.

Fish 943 IRMaster

This is a package that lets the Amiga act as a substitute remote control, with the ad-

dition of some fairly cheap extra hardware. You can learn and send nearly any infra red command, so total techno couch potatoes can control their TV from the workbench. Excellent show-off material, if nothing else.

WBflash

This quite pointless program smoothly colour cycles the active window or Workbench background. With some simple gadget clicks you can generate and save your own custom flash-patterns. Hard on the eyes, but worth a play.

Fish 944 Parcheesi

C'mon, everybody's played Parcheesi. The aim of the game is to get all of your markers safely around the board to your home base. There's three levels of play, with as many computer opponents as you like. Not pretty, but a decent enough version.

Fish 945 PrtSc

This is a significantly updated version (1.52) of the program to make the PrtSc (PrintScreen) button on your keypad actually (gasp!) print a screen. It's a bit more complex, a bit more stable and a bit more useful.

Reminder

A utility to remind you about events. It

consists of an event editor and a small program that is put in your WBStartup. Every time you boot your machine, this program checks the event database and puts up a requester (and optionally calls an ARexx script) if there are events that you need to be reminded about.

Fish 946 Yass

Yet Another Screen Selector is a commodity (WB2, again) with several nice features. It's completely controllable via keyboard (you can use your mouse, if you really want to), can show screens, windows, PublicScreenName, ScreenTitle, can change the default public screen, and can open its window even on non-public screens (option). At least the title's honest!

Fish 947 Mand2000

This is a demo version (save's disabled and it periodically reminds you how cool it is with little requestors) of a revolutionary fractal program that makes it far easier to explore the Mandelbrot set. The degree of funkiness this program attains is hard to describe, but its neatest feature is the ability to instantly zoom onto any chunk of a fractal image with an amazingly nifty animated bit. Heck, the thing's even got a "good spots" menu for fast pics of the interesting bits! You can have ten images generating at once! Make animations! Morphs! Anything!

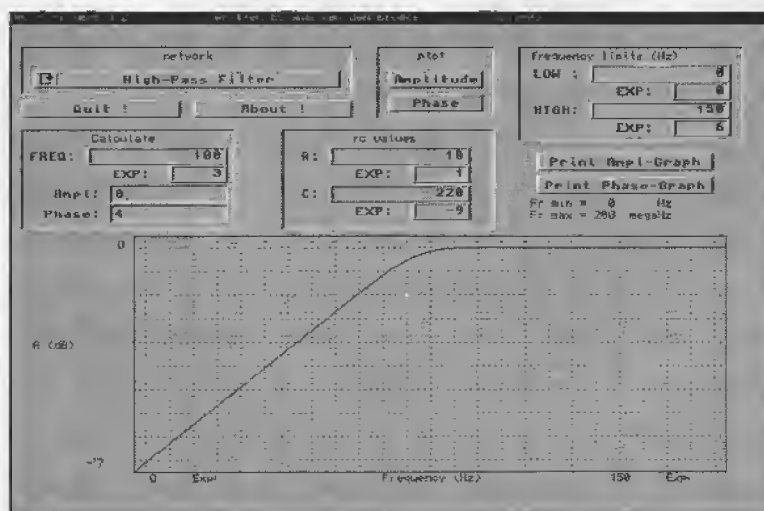
Mand2000 is compatible with all Amigas. It has separate calc routines that have been optimized for the 68000, 68020, 68030, 68040 and 68881 processors respectively. It automatically detects these to ensure maximum performance. *Mand2000* also makes full use of AGA graphics when available.

You have to see this program to believe it - a fast processor helps.

NewTool

This program quickly replaces the default tool in project icons. You can

Filters



specify the tool to use, use a file requester to pick the tool, or allow NewTool to automatically choose the proper tool depending on the file type. Requires WB2.

SMAus

This is a highly configurable "SUN-mouse" utility, implemented as a commodity (in case you've forgotten, this means WB2!) with a graphical user interface. It activates the window under the mouse pointer if you move or after you have moved the mouse or if you press a key. You can specify titles of windows not to deactivate using wildcards, which makes the program considerably less annoying than some sun mouse utilities, which love to deactivate file requestors,

SteamyWindows

Ah, another weird name. Warms my heart. This small yet very useful commodity increases the priority of the owner task of the active window, and restores the task's priority when the window becomes inactive unless someone else modified the task's priority meanwhile. So whatever you're doing gets first suck at the CPU teat, to avoid background processes slowing you down. Not always a good idea, but worth a look.

Fish 948

Snoopy

This *SnoopDOS* derivative lets you monitor library function calls for any library you wish. *Snoopy* differs from *SnoopDOS* in that there are no specific patches for specific functions - it's an all purpose tool to monitor ANY library call in ANY system library.

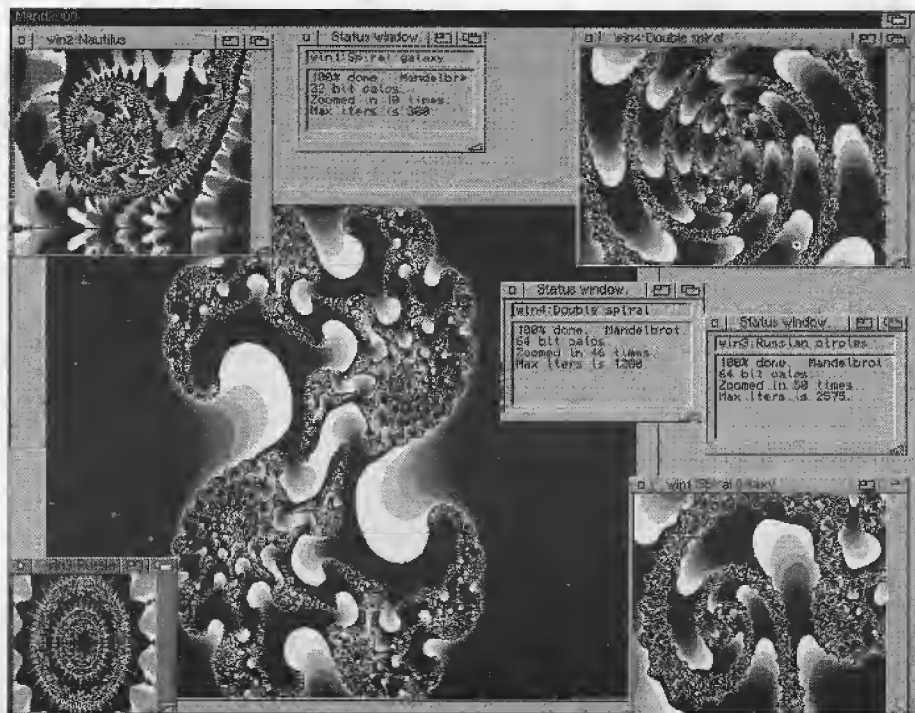
VirusZil

Release II of this popular shareware virus detector that recognizes many boot and file viruses. The filechecker can also decrunch files for testing. The memory checker removes all known viruses from memory without causing crashes and checks memory for viruses regularly. *VirusZ* has easy to use menus, including shortcuts for both beginners and experienced users. It now requires WB2.

Fish 950

BusyPointers

This is a collection of animated busy



Mand2000D

pointers for use with *NickPrefs* on disk 780. *NickPrefs* requires WB2, and seems to screw up under WB3. If you fit the bill, get it, and these busy pointers; some are average, some rather nifty and a couple very funny. I won't spoil the surprise.

ClockTool

The battery backed clock is what tells your Amiga what day it is, if you've got one. But, oddly, there's no way to see directly from AmigaDOS what time the battery backed clock thinks it is - you can only load the time into the system clock and then read that.

This simple CLI utility lets you display the battery or system clock, set one from the other, increment, and log. It's a useful little extra to have, for those special moments when you know one of the suckers is gaining but don't know which.

Enforcer

I've mentioned this before, and if you need it you'll know what it's for. It's a tool to monitor illegal memory access for 68020/68851, 68030, and 68040 CPUs. This is a completely new *Enforcer* from the original

idea by Bryce Nesbitt. It contains many new and wonderful features and options and no longer contains any exceptions for specific software. *Enforcer* can now also be used with CPU or SetCPU FASTROM or most any other MMU Kickstart mapping tool.

There are major new output options such as local output, stdout, and parallel port. It's highly optimized to be as fast as possible.

Naturally, it requires WB2.

Demos

Before I go, it's heartening to know that Hot PD consistently scored high with the people who returned our reader survey forms. However, there were also a few requests for more information on demos, those things that the Amiga does so much better than any other machine.

I've been working a few demos into the companion disks of late, but we've gone one step further now - next month will see the first instalment of a regular demo section in the Hot PD column, written by Mark Cocquio.

See you all then!

Trashcans, Genlocks and Lost Workbench

Copy_of_Trashcan?

Dear Help Line, Hope you can help me, somehow on my work drawer of my A2000 WB2, I have a copy_of_Trashcan as well as the normal Trashcan. I have tried to delete this by using delete from the pull down menu and it doesn't work as it is fuzzy. I then tried to drop the copy_of_trashcan into the normal Trashcan but that wouldn't work either.

Is there any way I can remove this or do I need to format my work partition to remove the extra one?

A. Richards
Wards River, NSW

ACAR: There is no need to go quite that far and format your Hard Drive. The Trashcan is a special drawer and using Workbench cannot be deleted; you can however delete your copy of Trashcan using the shell or CLI. Formatting a Hard Drive should always be a last resort in solving a problem.

The exception to the rule is in certain circumstances, eg upgrading software on a machine from 1.3 to 2.x, you need to format your HD to take advantage of the new filing system.

To overcome your problem is a simple case of entering two lines of text. You must first open up a shell from the system drawer of your Workbench partition or alternatively you can enter the following two commands into the execute command option from the pull down menu.

Make sure if you enter these commands from the execute command menu that you enter them as two separate commands and not together.

The commands are:

Delete Work:Copy_Of_Trashcan
Delete Work:Copy_Of_Trashcan.info

The first of these commands deletes the Trashcan drawer and the second deletes the icon file. Remember though, when entering commands into the Shell, they must be letter perfect and extra spaces anywhere also count.

The only spaces in the above commands are between the command delete and the word Work. If it doesn't work, check your spelling.

What is a Genlock?

Dear Help Line, I have an Amiga 500 with 1 meg of memory and an external drive. I want to use DeluxePaint to do titles for video. I am told I need a genlock, what exactly is a genlock and what does it do?

My local dealer has advised me to get a RocGen Plus. Is this what I need?

Ivan Campbell
Cooee Bay, Qld

ACAR: A genlock is a piece of hardware that allows you to merge two video signals together, a third signal is then produced which can be recorded.

The two signals used are: 1) images, pictures, animations or titles from the Amiga, and 2) a video signal from a VCR or video camera.

What happens is that the titles or images created on the Amiga are superimposed over the top of the live action from the VCR or camera. This is the main purpose of a genlock, to allow you to add titles to your own home movies.

The signal that is produced out of the rear of the genlock is a combination of the video signal with the titles overlaid on top and can be recorded as a finished product. This is basically how the TV stations manage to bring up the name of the show over

the top of the video image.

If you just want to use titles only with an Amiga background and no video signal, you can use an RF Modulator plugged into the RGB port.

As you may know, you can use your Amiga on a normal TV set that is capable of receiving UHF frequencies. If you can send a signal from the Amiga to a TV set, why not put a VCR between them and record the signal on the way. To do this you will need to tune in your VCR to the Amiga UHF frequency and plug your TV into the back of your recorder.

The quality on even the cheapest genlock is normally better than an RF Modulator. You may already have an RF Modulator with your Amiga. One is built in to the Amiga 1200.

The RocGen Plus is one of the cheapest genlocks available and you get what you pay for.

Validation Errors

Dear Help Line, Congratulations on your new column, I think it's a great idea to have a help area for beginners as it's sometimes a little hard to understand what the manuals are trying to say.

Here's my problem: I have an Amiga 500, one of my disks seems to have something wrong with it. Whenever I insert it into the drive it comes up with a message like "Error Validating Disk, use Disk Doctor to correct it" and I have to click on cancel several times to make it go away.

I don't have or know what Disk Doctor is, can you tell me where I can purchase this from and how to use it.

Lesley Sweet
Millendon, WA

ACAR: I see your problem. Disk Doctor is something you should try to avoid. How it works is it looks at a disk and all its files and just deletes all the faulty ones. This is only acceptable if they are nothing more than a few files you have created in a wordprocessor or a paint program. You lose a few files.

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If on the other hand you run Disk Doctor on a program disk, chances are you will delete files which are crucial to the disk's operation. Disk Doctor is run from the CLI, but I would recommend that you contact a PD library like Prime Artifax or Megadisk for one of the many good PD programs like FixDisk or DiskSalv.

These programs, for a couple of dollars for the cost of the disk, will do an excellent job of trying to fix the problem rather than just trying to delete it, with the down side that it may take a while to work out how to use all their features.

One of the easiest ways to ruin a disk is by taking it out of the drive while the drive light is on. Also try to keep disks away from strong magnets, rain, dogs etc.

Address Labels

Dear Help Line, I am looking for a program to use to produce name and address labels for my small business. Can you recommend a program for the Amiga that is easy to use with a large number of files?

Tom Donovan
Auckland, New Zealand

ACAR: You have several options here, you can try one of the many PD programs available from PD libraries or if you intend to work with large amounts of files try a program like Contact.

Contact is an Australia made product from CMF Software and should be available from your local dealer.

It will allow you to set up a small database with sort options, add contact names, phone number and fax as well as add your own notes about the client. If you have a modem on your computer it will also allow the computer to auto-dial customers for you.

If you intend to print out thousands of labels it would also be beneficial to have a bit of extra memory and a fast printer. A slow printer could be tied up for a day.

Some of the PD label printing programs you may find a little hard to use, and it doesn't help if their doc files are in Ger-

man.

Contact is distributed in Australia by Desktop Utilities on (06) 239 6658 and its RRP is around \$90.00.

A1200 Lost Workbench

Dear Help Line, I have an Amiga 1200HD. It's a great machine and I spend a lot of time using it for games and word processing, but now I have a problem. When I first received my A1200 I could just turn it on and Workbench would automatically load up.

Now when I turn it on I have to insert my Workbench disk in the drive for it to work. If I don't, what happens is that a white screen comes up with a message that says:

AMIGA ROM Operating System and Libraries

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and then nothing else happens. Can you tell me what the problem is and have I done something wrong?

Jon Turner
Leichardt, NSW

ACAR: Well Jon, it sounds to me like you have accidentally formatted your hard drive, or deleted your startup-sequence. This is a common mistake and is easy to do. You have probably been formatting disks and just selected the wrong icon (ie your Workbench: icon instead of DF0:). If you are lucky you will have only lost your Workbench partition, and your Work partition with all your programs and data on it will still be safe.

If this is the case, what is happening is that when you turn on your A1200, it is looking for the startup-sequence (which is definitely missing) and all the other Workbench files to start it up - these are probably missing too. Since it has nothing to load it just comes to a halt.

What you need to do is make sure that all your Workbench disks are write protected. Then boot your machine (turn it on

or press Left-Amiga/Right-Amiga/CTRL) with the Workbench 3.0 install disk in DF0. Open the disk, then double click on the install drawer and then on English to start the installation process. After a few seconds it will give you an explanation of what you are about to do, click on proceed to continue.

Next you will need to click on Install Release 3 and then you will be in the main part of the installation program. As long as you leave the Installation mode set to Novice user almost everything will be automatic.

Next click on "proceed with install", The next menu will ask you which languages to install. Make sure English has a tick next to it, then click on proceed. You will then be asked to select which printer drivers to install. To select which drivers you want to install click on the box next to the name. If you're not sure then just select them all and select proceed. Lastly you will be asked which keymaps to install, in Australia we need to select American. Why not British, I hear you ask. If you select British here you will have a pound sign instead of a dollar sign as a currency symbol. Select American and click on proceed.

This procedure will take several minutes to complete and you will be asked from time to time to insert the next disk into the drive. When finished eject all disks from your computer and re-boot (Left-Amiga/Right Amiga/and Ctrl) and you should find it will now start up again from the hard drive.

If you have many programs on your Work partition you may find that you need to recreate your user-startup in the s drawer of your Workbench partition. This will only need to be done if the programs you are using need assign statements or any special instructions to run.

If you are still having problems with all of the above, you can get help and support on a one-on-one basis in the Sydney metro area. Check out the adverts at the bottom of these two pages. □

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Interfaces without banks

by Wayne Johnson

Remember a few months ago, I showed you how to create your own resource banks for use with the interface language? For those who don't know what a resource bank is, it's a block of data containing buttons, gadgets, sliders, and all sorts of images for creating interfaces.

However, some people probably don't want to have to make their own images in *Dpaint* and turn them into interface format before programming. I'm sure most people would rather use the one that exists in AMOSPro already.

You may notice that AMOSPro's editor contains a lot of sliders and buttons which you use all the time. These buttons all come from the AMOSPro_Editor_Resource.abk file. When you use the Monitor (debugger), you also see many strange gadgets and buttons. These come from the AMOSPro_Monitor_Resource.abk file.

But there's also another one, AMOSPro_Default_resource.abk. This, like the other two, is loaded into memory every time AMOSPro is started up. Therefore, you always have access to button images instead of having to create your own. In the last interface program we looked at, I showed you the command RESOURCE BANK 16. This told AMOSPro that we wish to use the images stored in bank 16. But if we don't say anything, we automatically get the default images! Easy, eh?

We're going to write a calculator program and we'll set up the interface itself first, and do the code later to handle the maths:

```
Global KEYNUMBER, OPERATOR, POSITION, NUMBER$, BUTTON_TOTAL
POSITION=1 : Ink 0
OPERATOR=1
```

```
Screen Open 0,640,150,8,Hires
```

```
Writing 0,2 : Pen 4
```

```
Curs Off : Cls 0 : Colour 2,$700
```

```
Colour 3,$FFF : Colour 5,$F77 : Colour 6,$F00
```

```
A$="BA 160,52;"
```

```
A$=A$+"BU 1,0,32,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'1',3;][BR 0;]"
```

```
A$=A$+"BU 2,64,32,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'2',3;][BR 0;]"
```

```
A$=A$+"BU 3,128,32,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'3',3;][BR 0;]"
```

```
A$=A$+"BU 4,0,16,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'4',3;][BR 0;]"
```

```
A$=A$+"BU 5,64,16,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'5',3;][BR 0;]"
A$=A$+"BU 6,128,16,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'6',3;][BR 0;]"
A$=A$+"BU 7,0,0,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'7',3;][BR 0;]"
A$=A$+"BU 8,64,0,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'8',3;][BR 0;]"
A$=A$+"BU 9,128,0,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'9',3;][BR 0;]"
A$=A$+"BU 10,0,48,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'0',3;][BR 0;]"
A$=A$+"BU 11,64,48,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'C',3;][BR 0;]"
A$=A$+"BU 12,128,48,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'=',3;][BR 0;]"
A$=A$+"BU 13,200,0,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'+',3;][BR 0;]"
A$=A$+"BU 14,200,16,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'-',3;][BR 0;]"
A$=A$+"BU 15,200,32,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'/',3;][BR 0;]"
A$=A$+"BU 16,200,48,64,16,0,0,1; [UN 0,0,BP13+; PR 27,4,'X',3;][BR 0;]"
A$=A$+"
A$=A$+"EX;"
```

```
Dialog Open 1,A$
```

```
X=Dialog Run(1)
```

```
Do
```

```
  If Mousekey=2 : Edit : Endif
```

```
Loop
```

A quick explanation of the above: The program sets up a few variables to be global so that they can be read between procedures. Next, after we open a hires screen, A\$ is assigned the interface program with all the buttons and positions. Finally, we assign the interface program into channel 1 and run it. At the moment, you can run the program and it will display the calculator but we don't have any maths in there yet. Right mouse button will take you back to the editor.

Now for the rest of the program. First, remove the Do/Loop at the bottom of the program above and replace it with the following:

```
Do
```

```
  _GETNUMBER
```

```
  _GETOPERATOR
```

```
Loop
```

This is basically the heart of the program and all it does is call a procedure called _GETNUMBER to scan the calculator for the first number entered. Second, it calls the _GETOPERATOR procedure to determine whether a +, -, /, or * operator has been clicked on. The rest of the program continues with:

```
Procedure _GETNUMBER
```

```
  NUMBER$=""
```




```

Do
  BUTTON=Dialog(1)

  If BUTTON=10
    If Len(NUMBER$)=0 : Ink 0 : Bar 0,0 To 100,16 : Home : End
  If
    Print Right$(Str$(BUTTON),1);
    NUMBER$=NUMBER$+Right$(Str$(BUTTON),1)
  End If

  If BUTTON<=9 and BUTTON>=1
    If Len(NUMBER$)=0 : Ink 0 : Bar 0,0 To 100,16 : Home : End
  If
    Print Right$(Str$(BUTTON),1);
    NUMBER$=NUMBER$+Right$(Str$(BUTTON),1)
  End If

  If BUTTON>10 : KEYNUMBER=Val(NUMBER$) : Pop Proc : End If
  If Mouse Key=2 : Dialog Freeze : Edit : End If
Loop
End Proc

Procedure _GETOPERATOR
If OPERATOR=1 : _TOTAL=_TOTAL+KEYNUMBER : End If
If OPERATOR=2 : _TOTAL=_TOTAL-KEYNUMBER : End If
If OPERATOR=3 : _TOTAL=_TOTAL/KEYNUMBER : End If
If OPERATOR=4 : _TOTAL=_TOTAL*KEYNUMBER : End If
Do
  If BUTTON=11 : _TOTAL=0 : Ink 0 : Bar 0,0 To 100,16 : Pop Proc : End If
  If BUTTON=12 : Home : Print _TOTAL; : Wait 80 : Edit : End If
  If BUTTON>12 and BUTTON<17 : OPERATOR=BUTTON-12

```

```

Ink 0 : Bar 0,0 To 100,16 : Home : Print _TOTAL; : Pop Proc :
End If
Loop
End Proc

```

News

● At the time of writing, the AGA and intuition extensions are still not here. However, it appears that a group in the US are writing another intuition extension so one or the other will exist eventually.

● The new Turbo Plus extension is now available by ordering from Public Domain Plus. The new version allows for vertical blits which will allow effects like sinus-scrolling.

● PCOS, the IBM PC version of AMOSPro, looks to be released early '95, possibly before. At first, it looked to be capable of programming Windows applications, but it now seems that it will be just a games creator.

● An Australian programmer has created an extension to replace the old AMOS music Extension. This one supports all protracker Exx commands and will do weird extras like rip samples from modules. More details next month.

● Yet another extension is emerging from America (they grow on trees, you know). It is called LIME and rumours are uncertain as to what it does. It could possibly be the second intuition extension. □

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Games you can play on your local BBS

Welcome back to Amiga Online. This issue, we take a look at some of the other things you can do on bulletin boards, beyond just downloading files. Next issue you can look forward to the first of our BBS reviews, where we'll also take a look at MEBBS, the latest version of the popular Starnet BBS package, along with some other juicy bits of info. For now, on with the show.

Hands up all those people who log onto their favourite bulletin board, use up all their time downloading files and then promptly log off and proceed to call the next board to do the same thing all over again. Sound familiar?

If you're a BBS file junkie, then one of my aims this month is to try and convince you that you're missing out on a heap of other good stuff. Yep, that's right folks. All those other keys you see on the BBS menus you call, which have little or nothing to do with files for downloading, are actually useful.

Try the message areas of your favourite board next time you call, or even the

online games. There's a heap of fun to be had and you can actually compete against other people in ways other than getting your name on the top of the Best Downloaders listing.

Being a system operator of a relatively small system myself, I've often been surprised to note how few of the callers seem to take advantage of the many other things that the board has to offer them. Fidonet and AmigaNet message areas ranging in topics from general chatter and penpal areas, some of which go all over the world, to Amiga related news groups which are full of good meaty info on the Amiga, free for the taking for whoever takes the time to look and read.

Got something for sale or looking for a great deal on some second-hand gear? Have a gander at the For Sale echoes. Want to chinwag with some like-minded people about your Amiga? Try the dozens of Amiga related echoes available.

Many modem owners happily spend \$10 or \$20 a month on magazines to stay up to date with their hobbies, yet don't take advantage of the free, and more up to date, information available to them on bulletin boards.

Online Games

You like games? Then be daring and try your hand at some of the great online games available at your favourite BBS next time you call.

I can just hear some of you now - why waste good download time by playing an online game when you can download a game or two and play them for as long as you like after you log off? The answer is

simple. Online games give the added thrill of human competition. It's one thing to win at a game against your computer - to outsmart a human opponent is a different kettle of fish altogether.

What's available

Heaps, depending on where you call. Here at Andy's Attic BBS, you'll find various one-armed bandit games. Yes, you can play the pokies on bulletin boards too! Some variations have the aim of simply being the top scorer at the end of each week or month. Other variations actually let you bet and gamble with your online time.

If poker machines aren't your cup of tea, then how about *Tetris*? Anyone for Chess? Ten Pin Bowling? Fancy a bet (of time or download points) on a horse or at the dog track? If you don't want to risk your time and car racing is more your thing, then hop into a shiny new Pontiac, Ford, Dodge or Buick and try your luck and skill at the car racing track. Great stuff and I've only touched on some of the most simple games.

Serious gamers will soon get involved in some of the big time online games available. Games that last for months at a time. *Barons Realms Elite* (BRE for short) which combines trading and strategy to try and become the wealthiest baron in the land. *Tradewars 2002*, where you can step into a spaceship and blow everyone away while striving to be the wealthiest trader in the universe. It's all in good fun.

If futuristic and role playing games are more to your liking, then try out *Operation Overkill 2*, a complex yet easy to play game that is set in the year 2060 AD. Team up with other players and form squadrons where you can help one another win the game. Trade, fighting and strategy are all combined in *Overkill*, and it happens to be one of my own personal favourites.

Take a step back into medieval times and lose yourself in the mystical and magical world of *The Pit*. Melee with other players and an abundance of weird and wonderful creatures all in the safety and comfort of your own home.

This game is highly addictive to those partial to role playing games and will

Online AMIGA!



by Andrew Leniart

guarantee you keep coming back for more. Your ultimate aim is to have your name added to the infamous list of Immortal players.

It would be impossible to list every online game available, because there are literally hundreds of them, with more appearing nearly every week. Some of them, like BRE, are even interBBS - bulletin boards call one another and exchange game data files so you are playing against people on other bulletin boards as well.

Conclusion

So there you have it. Give some of these things a try the next time you call a BBS and you might recapture that great exciting feeling just about everyone experienced when they first got the modem home and rang their first board. Life is too short. Try everything.

Andrew Leniart can be contacted direct via modem at ... Andy's Attic BBS (03) 749-4897 3:633/106 @fidonet

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Here are some new Amiga supporting Bulletin Boards for you to try out. Take note when you see an "Hours:" entry in these listings, as some of these boards operate on a part time basis only. Call at times other than the hours of operation listed and all your modem will end up getting is a grumpy voice.

Thanks to the Australian BBS Registry for compiling and maintaining the lists these systems are taken out of and for allowing us to reproduce them.

AUSTRALIAN CAPITAL TERRITORY

Status: *** Online ***

System: Desktop Utilities BBS

Sysop: Frank Keighley

Phone: (06) 239-6659

Baud: V.21 V.22 V.22bis V.23 V.32

Access: Reg VA

Computer: Amiga 2000

DOS: AmigaDOS

BBSSoftware: Xenolink

NEW SOUTH WALES

Status: *** Online ***

System: OzOnline

Sysop: Tyrone Rossow

Phone: (02) 264-3636

FidoNet: 3:712/608

AmigaNet: 41:200/608

Baud: V.21 V.22 V.22bis V.23 V.32 V.32bis

Access: Mem VA

Computer: Amiga 4000/40

DOS: AmigaDOS

BBSSoftware: Excelsior!

*** NEW System ***

System: Realms of Fantasy BBS

Sysop: Dark Knight

Phone: (02) 543-0395

Baud: V.22 V.22bis V.23 V.32 V.32bis

Access: Mem VA

Computer: Amiga 1200/40

DOS: AmigaDOS

BBSSoftware: M A X's BBS

*** NEW System ***

System: Shadow Run BBS

Sysop: Allan Mostyn

Phone: (042) 97-0958

FidoNet: 3:712/410.1

Baud: V.22bis

Access: Public

Computer: Amiga 2000

DOS: AmigaDOS

BBSSoftware: M A X's BBS

*** NEW System ***

System: Sollaris BBS

Sysop: Marc

Phone: (02) 599-4406

Baud: V.21 V.22 V.22bis

Access: Public

Computer: Amiga 1200

DOS: AmigaDOS

BBSSoftware: M A X's BBS

*** NEW System ***

System: The Cheese Man

Sysop: Michael Sirmai

Phone: (02) 953-7487

Baud: V.22 V.22bis

Access: Reg VA

Hours: Daily: 2100 - 0700

Computer: Amiga 3000

DOS: AmigaDos

BBSSoftware: M A X's BBS

VICTORIA

*** NEW System ***

System: TJ's BBS

Sysop: Trevor Moore

Phone: (052) 72-1389 Multi-Line

Baud: V.22 V.22bis V.32 V.32bis

Access: Mem Reg LVA

Computer: Amiga 3000

DOS: AmigaDOS

BBSSoftware: Xenolink

WESTERN AUSTRALIA

*** Amended ***

System: AmigaLynk

Sysop: Caldour

Phone: (09) 592-6955

FidoNet: 3:690/670

AmigaNet: 41:616/670

Baud: V.21 V.22 V.22bis V.23 V.32 V.32bis

Access: Mem Reg VA

Computer: Amiga 2500

DOS: AmigaDOS

BBSSoftware: Xenolink Pro



ToolManager & MagicWB

Your Workbench can look this good - ToolManager provides fast access to any program. If you're not using it, you're wasting time. MagicWB replaces those dull WB icons with new 8-colour versions which are much smarter. 1 Disk each.

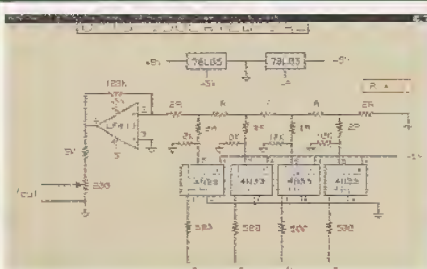
Have you wondered what's on our disks?

**All \$5 each...
(even less when you buy more.)**



Graphics #4

A full paint program, image filing package and more on one disk - FreePaint (pictured above) has a Deluxe Paint style interface making it easy to use. It's the ideal way to test the waters and see if paint software interests you. Fully functional. 1 Disk. 1Mb recommended.



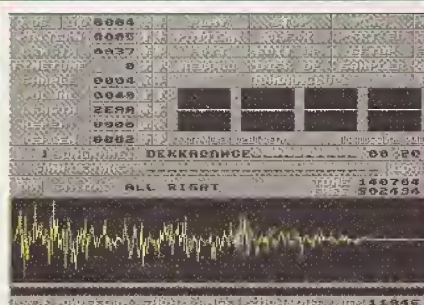
CAD Software

Many of our disks contain a collection of related programs - take our CAD disk for example. You'll find five CAD programs, including software for landscape and speaker design. Pictured above is MCAD - ideal for circuit drawings or plan view drawings. There's also LogicLab for designing electronic circuits. All this on one disk.

Author	Title	Publisher	Software
Adams, George	Five Card's Historic Defence Agency	For Social Ltd	1989
Adams, George	Pharmaceuticals Guide to the World's Top	Gold Publishing	1989
Adams, L. Fred	History of Co. Inc.	Parsons Publishers Limited	1989
Adams, L. Fred	International Boy's Own Club	Parsons Publishers Limited	1989
Adams, L. Fred	International Boy's Own Club	Parsons Publishers Limited	1989
Adams, L. Fred	International Boy's Own Club	Parsons Publishers Limited	1989
Adams, L. Fred	International Boy's Own Club	Parsons Publishers Limited	1989
Adams, L. Fred	International Boy's Own Club	Parsons Publishers Limited	1989
Adams, L. Fred	International Boy's Own Club	Parsons Publishers Limited	1989
Adams, L. Fred	International Boy's Own Club	Parsons Publishers Limited	1989

Database II

A collection of simple to use database programs for maintaining all sorts of lists - from catalogues to clients. Flexer - pictured above - is one of the new programs included on release II of the database compilation. Flexer's form-like display makes it ideal for beginners, and powerful enough for advanced users.



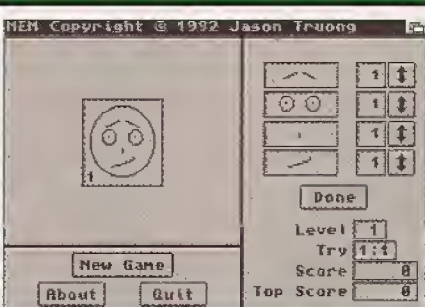
Protracker

Edit and create your own music. Alter instruments digitally, sequence up drums, samples and create stand alone modules. Protracker is the one used by the game designers to create music. We also have 23 disks of excellent music tracks (we're very fussy about what's included) which can load into Protracker. One disk. 1Mb



Image Processing

Digital Illusions is fully functional and allows impress image processing and animation functions to be executed on IFF images. Powerful AdPro style interface. One disk. (HAMLAB demo inc. too)



Education #5

We now have a total of six disks of education software. Mem (a memory game - picture above) is from education #5 - one of five programs on the disk. Others include Maths Adventure, Division, Counting and Lemonade. Education 6 has an excellent puzzle game called OXYD.

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Minimorph

Create your own animation of morphing just like program costing \$100's. We'll even scan in your photos for you and prepare them ready for processing. (\$5 per photo) Works in grey-scale only. 1Mb RAM required. Powerful reasonably easy to learn interface. Ideal for A1200.

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HOT GAMES DISKS

- #1 - AirAce, Missile Command (Atari style), Cara Race, Downhill Racer (Skiing)
- #2 - BlackJack, Metro (Trains), China Challenge, Klondike (21)
- #3 - Hate (3D Perspective shoot 'em up), Megaball break-out style game)
- #4 - Galaxian, Pacman, Space Invaders and Asteroid look-a-likes - "the classics"
- #5 - Imperium, Mech Fight, SCombat
- #6 - Chute!, Defender, Pharaoh's Curse, SkyFight, SpaceWar
- #7 - Amiga Tanx, Cave Runner, X-Fire, Bally III, Llamatron, Obess-O-Matic
- #8 - Asteroids, Bug Blaster, Microbe, Posing, Revenge of the Mutant Camels, Ring War, Trix
- #9 - Pacman (brilliant copy of the original), OmegaRace, Columns, Nebula and PDD.
- #10 - Donkey Kong, Galaga (the best!), Arilerus, Fleuch
- #11 - Scorched Tanks - the latest super version, 2-4 players.
- Adventure 1 - Island of Nephoton, Rescue & Jungle, Zut Alcrs! and Treasure Island. Some text based.
- Star Trek - The Game, with sound-FX, animation, point and click interface, various missions. 1Mb
- Balance of Power - Strategy game for one or two players. Control the world powers to avoid nuclear war.
- UChess - Chess game - Needs 4Mb and accelerator - Ideal for A1200 or 4000. AGA Support.

Home Office

- CAD - Five Programs: Speaker and Circuit Design, Landscape & Architectural

- Database - Hyperbase, HyperDialer, DataEasy, Home Manager, bBasell
- Forms Designer - Text based forms editor.
- Genealogy 1 - A-Gen and Family History
- Genealogy 2 - Arjay - Up to 1000 people, WB2.x/1Mb required.
- Home Budget - Assorted home finance programs.
- Home Tools - TouchTyping, simple database, Furniture Helper, Resume Maker, VCR Database, Diet Aid and LP Database.
- Spreadsheets - Easy to use SCalc, SPREAD and EasyCalc
- Finance - BankIt, Your Money, Budget and CheckBook
- Text Editors - Az, UEdit, QED, DME + Text Editors Guide
- Wordprocessing - Text Plus, AmigaFOX, Limer, SuperRetLab, GWPrint & Print Studio
- Protect 4.3 - Includes spell checker, word count, footnotes, anagrams - hundreds more features. Text only - no graphics.
- Bowling - Keep track of bowling scores. 1Mb required.

- Communications
- NCCMM 3.0 - Shareware AREXX, SCRIPTing, simple BBS mode.
- Term 3.4 - Freeware, scripting, powerful, 3 disks, hard-drive req. WB2.x required.

Fonts

- CG-Font Pack 1 - Suitable for Workbench 2.x and above, Final Copy, Professional Page, Pagestream and PageSetter III. 60 different Compugraphic fonts. 8 disk set.
- Bit-Mapped Font Pack 1 - Suitable

- for Wordbench 1.3. Over 40 different fonts, ready to use directly from floppy
- Ideal for Deluxe Paint and most paint programs. 8 Disk Set.

Clip Art

- Clip Art Pack 1 - A selection of black and white, bitmapped clips, suitable for wordprocessing and desktop publishing. Three disk set - \$13.50
- Structured Clip 1 - Assorted ProDraw format clip-art.

Desktop Publishing

- Pagesream Enhancer - requires Pagesream 2.x or better. New drivers, Postscript utilities and more.
- Professional Page Enhancer - requires PPage 3.x or better. Lots of great goodies for smart borders, copying pages, group, special effects.
- PageSetter 1.2 - Entry level desktop publishing program.

Cartoons (Require 1Mb FREE)

- Cartoon 1: Batman, Shuttlesack, Stealthy
- Cartoon 2: Amy Vs Walker
- Cartoon 3: Juliette, Juliette 2, Juggler 2
- Cartoon 4: F16 Combat, Stealthy Manver II
- Cartoon 5: Bigs Bunny
- Big Cartoons (Require 3Mb)
- Big Cartoon 1: Anli-Lammings
- Big Cartoon 2: Coyote
- Big Cartoon 3: Pogo
- Big Cartoon 4: The Dating Game (2 disks)
- Big Cartoon 5: Unsporting
- Big Cartoon 6: Enterprise Docking
- Big Cartoon 7: Bait-Masking

Education

- Education 1 - Elements, Draw Map, Rubik, Space Log, Gears
- Education 2 - Gravity Well, Planets, Life Cycles, Orbit, Enigmas, ZPlot
- Education 3 - Word Puzzle, Crossword, Word Game, A-Solve, POWER LOGO!
- Education 4 - PlotMap - Two disk set - creates maps of world, save in IFF format.
- Hypertext - Create text files with links to animation, graphics, sounds, songs - anything (via AREXX). 1Mb & WB2.x required.
- Stockmarket Simulation - Buy and sell shares, take out a bank overdraft, and eventually qualify to join the insiders club. Local program to simulate local conditions.
- Chemistry - Create 3D models of different molecules

Emulation

- Atari Emulator - German Only
- MS-DOS Emulator - PC-TASK (shareware-no write to disk) & Transformer. Run most MS-DOS business software.
- C64 Emulator - Run C64 Program, Interface C64 Peripherals (opt. interface available from U.S.A. Only)

Graphics and Animation

- Graphics 1 - Still Store: For sequencing stills for video production
- Graphics 2 - Mostra, ImageLab, TitleGen, sMovie, ABridge, SceneGenDemo, SlideMaster
- Graphics 3 - Icon-Editor, Turbo Title, Cyro-Animation Utility
- Graphics 4 - FreePaint, Graffiti, PED, PicBase - IFF Database
- MandleBot Tools - Six Disks, Create

amazing shapes and patterns!

- MiniMorph - Create your own 16 grey-scale morphs. 1Mb
- AGA Demos 1 - HOIS-AGA and AGA- Amiga Boing.
- Mobilet - By Spaceballs - 3D Animation. A1200 and 3000 compatible.
- AGA Images - Six disks of hot AGA pictures including 3D rendered in Aladdin, and photos.
- Imagine Objects 1 - Enterprise, Chess Pieces, Amiga 3000.

Music and Sound

- Med 3.1 - The best Amiga low-level sequencer - some MIDI support
- Sound Tools - Play, edit, arrange, distort and create IFF sound samples
- Sound FX 1 - Filled with short, sweet sound samples - Bells, Horns, Dogs..
- Remix 1 - Two remixed music samples - Madonna and Black Box
- Tracks 1 - 1733, Aggression, Angies, Arkenoid, Atmospheric, AxelF, Azetrev
- Tracks 2 - Beat, Benny, Biochal1, Biochal2, Blue Days, Blue Moon, Boss, Call Me, T.C.S.
- Tracks 3 - Cloud Song, Creation 2, Crocokets, Ear, Electric Dreams, Last Ninja II, Megaforce, Metal Synth
- Tracks 4 - Oxygen, Plano-Pink, PopCorn, RSI-Hard, Skylight, Smoke, SuperBASIC, Tocatta
- Tracks 5 - BatDance, Bond, Fresh House, Lambada, Pawnl, WasteLand
- Movie Samples - 9 Disks of IFF "Make My Day" style samples (Tracks 6-23 also available now.)

Improve Your Workbench

- AGA Utilities 1 - AGA Anim players, picture showers, AGA disable, GIF

shower and more.

- WB1.3 Superdisk - Bootable, ready-to-run. Read/Write MS-DOS disks, DIRWORK file manager, AutoCLI WB Enhancer, includes Documentation on disk.
- WB2.x Enhancer - Icons, Presets, NAG program for appointments, Fractal Screen Blanker, KCommodity: Auto window activation, Clock/Memory usage, Keystroke Audible Click, Gadgetless window closing, Hotkey, Mouse accelerator and much more.
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- Hard Disk Utilities 1 - HD Backup, Alloc security, Undelete, Disk editor, mark out bad blocks, alter your boot logo, find misplaced files and HDMem.
- Parbench - Network two Amigas via a special Parallel cable. Ideal for CDTV owners to use as a CD-ROM drive.

Programming

- ACE AmigaBASIC Compiler 1.1 - Speed up your BASIC programs into fast executable binary. Includes linker and assembler.
- Pascal - Two disks, PASCAL includes PCQ compiler, A68K, Blink, Debugger, Mon, examples and PCQ source.

Hot Games 11 Two player fun!

- Scorched Tanks - a classic action/strategy game for 2-4 players.
- TNG - Star Trek strategy game with Next Generation scenarios.

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February ACAR

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Useful Pokes

Almost anyone that has dabbled in programming on the C64 has produced a piece of code they are particularly proud of. Call it our basically selfish instinct, or just a desire to protect copyright, but many of us aren't too thrilled with the idea of openly showing how our program operates. And so the necessary evil, the program protection schemes, were born.

Printed below is a variety of simple protection schemes. While offering little security against a determined user with a freeze cartridge and a bit of trickery, these will be enough to stop most prying eyes.

POKE	EFFECT
774,131:775,164	Disables LIST
774,226:775,252	List gives cold start
775,168	Disables LIST
778,52:808,239	Disables STOP
778,49:808,237	Enables STOP
792,193	Disables RESTORE
792,71	Enables RESTORE
808,127	Disables RUN
808,234	Disables STOP/RESTORE/LIST
808,225	Disables STOP/RESTORE
808,239	Disables STOP (RESTORE OK)
818,131:819,164	Disables SAVE
818,226:819,252	SAVE gives cold start

Here is a technique that hides a 64 program from listing as well as disabling the STOP/RESTORE keys. But be warned that this method is PERMANENT. Make sure you have a backup copy before protecting it. Your program must not use lines 0, 1, or 2. To protect it, use the following four steps:

- 1) Add this special line 2 to the program:
2 POKE 43, PEEK(2049):POKE 44, PEEK(2050):POKE 808,234
- 2) Replace all ENDS and exit points with:
POKE 43,1:POKE 44,8:POKE 808, 237
- 3) Add this line:
1 REM "[cursor left, insert 20, delete 10, space 10, cursor right]NO FAIR PEEKING[shift L]"
- 4) Type this:
POKE 2051, 255:POKE 2052, 255[return]

Line 1 mentions insert 20, delete 10 etc, which refers to key presses. For example, in step three, following the quote marks, press the cursor left key, press the insert key (shift/delete) 20 times etc.

What happens when your user wishes to quit your program? The routines above would be useless if you had an exit option in your program that only used the END command. What we need is something

that would clear your program from memory and then reset the 64. Here's a routine that does just that:

```
10 FOR X=828 TO 857
20 READ A
30 B=B+A
40 POKE X,A
50 NEXT X
60 IF B<>5354 THEN PRINT "DATA ERROR":END
80 SYS 828
90 DATA 169, 0, 133, 251, 169, 8, 133, 252
100 DATA 169, 0, 168, 145, 251, 200, 196, 251
110 DATA 208, 249, 230, 252, 169, 250, 197, 252
120 DATA 208, 238, 32, 226, 252, 96
```

This routine will clear all RAM and then reset the 64. Just adapt it as a sub-routine to your BASIC program.

Basic speed

Programs written in BASIC are usually slow in operation. By following some simple guidelines, however, you can quite dramatically improve the flow of your program. Below is a collection of suggestions for increasing the speed of your own programs.

Variables are faster and more efficient than literal numbers. You see when variables are defined, they are stored in a format that BASIC can use automatically. Numbers are read by BASIC one digit at a time and are then converted.

Your program will benefit most from this when the variables are accessed more than once. An example would be filling part of the screen with the capital letter 'O'. Your program might look like this:

```
10 FOR J=1 TO 600
20 POKE 1024+J, 79
30 NEXT J
```

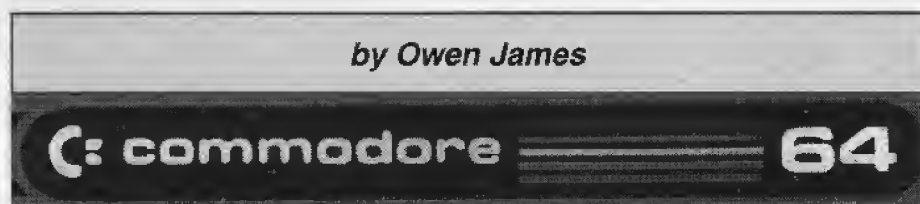
Try this routine with a watch handy. My time was 6.8 seconds. Now try this modification:

```
5 A=1024:B=79
10 FOR J=1 TO 600
20 POKE A+J, B
30 NEXT J
```

You should see an improvement of over 50 percent. Just imagine if you applied this to an even longer program.

Keep in mind that variables are stored in the order they're created. If your going

by Owen James



to use variable K the most, define it first. That way when BASIC checks to see the current value of K it won't have to look too far down the list. Commodore BASIC doesn't store variables alphabetically. If variable Z is created before A then Z appears before A in the list. The speed increase from using this tip is relative to the amount of variables in use.

If you want to set variables to zero, use the full-stop. BASIC interprets full-stops as zeros so long as they are not part of another number. For example, A=0 could be written as A=., but A=102 could NOT be written as A=1.2.

Of course if you have a lot of variables to set to zero you can use the DIM command. Normally the DIMension instruction is for dimensioning arrays, but if you leave out the usual brackets containing the array size it will set the variables to zero. For example, DIM A\$,B,C\$,D.

Something else to remember is that the (non-array) variable table that BASIC uses to keep track of variables resides above the table for array variables. If you have a program that defines a large quantity of array variables and then goes on to define non-array variables, you'll notice a fairly lengthy pause. This is because BASIC must transfer the array variable table down every time you wish to add to the non-array variable table.

Sound confusing? Think about a document in your word processor that contains four paragraphs. If you want to add a new paragraph in between paragraph one and two your word processor must first push everything beneath paragraph one down to make more room. This pushing takes time, hence the pause.

To get around this you should define all non-array variables (A\$, B\$, C, or whatever) first, then your array variables (A\$(3), B\$(8) etc).

If unsure about what the variables are going to contain then give them a value of zero. That way they'll be part of the table and there won't be a need to push down the array table later. And a last point on variables. Don't use them with NEXT statements. BASIC remembers to go back to the last FOR (even in nested loops) and so using a variable after NEXT will just take up time while BASIC checks its current value.

Something else to avoid is unnecessary statements. REM is a good example. Even though lines beginning with REM are ignored, BASIC must first recognize the command. I normally produce documentation on paper, like:

LINES 1-100

Set up display. Variables B, F, G contain colour values.

LINE 130

Algorithm for calculating tax, etc.

I find this to be much more efficient, and it even takes up less memory.

Speed also depends on the way the program is written. Clear, logical code will nearly always be faster than 'spaghetti' code. Always plan a program before sitting in front of the keyboard. Write down a list of the program's objectives, and then break these into manageable sections.

From here, use a flowchart or pseudo-code to write these sections of the program. It doesn't have to be too detailed at this point. When you're happy that your plans are straightforward and represent what you want, then start coding on paper. Continue to refine your program to make it as efficient as possible, using the above mentioned tips.

The actual construction phase should always be the shortest part of writing a program. Most of your time should be devoted to planning and testing it. Always make sure your program is well documented on paper. Keep a list of what lines do what for future reference. This will help immensely with debugging.

If your program is still too slow, analyse and find the parts that are holding it up. Can they be refined any further? If not then find someone that can rewrite that part as a machine code routine for you. Or better, compile the program using one of the many BASIC compilers on the market. You can obtain a speed increase of 30 to 40 percent by doing this.

Reader Help

Colin Smith would like to hear from anyone with knowledge or experience in using the C64 to intercept and display Satellite weather pictures etc, in a similar

way to how PCs handle it. Any reader with information or help they can offer should contact Colin care of Murwillumbah Post Office, Murwillumbah 2484.

Gary Selwood has recently acquired an almost retired CBM 4032 from many years ago. Gary would like to hear from anyone with software or experience with this machine. Users wishing to help should contact Gary direct by telephoning (063) 654 306.

Tips and Tricks

To reduce 'head bump' on the 1541 try this:

```
OPEN 15,8,15
PRINT#15,"M-
W"CHR$(106)CHR$(0)CHR$(1)CHR$(129)
CLOSE 15
```

This method might conflict with some protection methods, but for general use it should work fine. Using this tip will reduce the need for realignment.

A few interesting POKES to experiment with:

POKE	EFFECT
53265,11	Turns off screen (computer runs faster)
53265,27	Turns on screen
53272,21	Switches to GRAPHICS mode
53272,23	Switches to LOWER case mode
657,128	Disables SHIFT/COMMODORE keys
657,0	Enables above

And a few ROM routines:

HEX\$	DECIMAL	EFFECT
\$E544	58692	Clears the screen
\$E8EA	59626	Scrolls screen up one row
\$E981	59777	Scrolls screen down one row (Poke 677, no. of rows to scroll down)
\$E9FF	59903	Clears entire row (eg. POKE 781, X: SYS 59903)
\$FE66	65126	WARM START
\$FCE2	64738	COLD START

Like to know how many files are still open? Try PRINT PEEK(152).

That wraps up this edition of The C64 Column. As always, I'd love to hear from you. Send your tips, tricks, questions and suggestions to me care of The C64 Column, PO Box 288, Gladesville NSW 2111, or via Fido Netmail at 3:713/888.999. □

MICHAEL SPITERI'S

Adventurer's Realm

The Amiga CD32 has been described by some as the ultimate games console, but surely the range of games should not stop at arcade games. The IBM-PC has shown that some incredible adventure games are possible given the huge storage capacity of CD's, take *Return to Zork* and *Lost in Time* as two good examples. I predict it will be a matter of time before we see some good CD32 adventure games. Let's face it, a keyboard is no longer necessary.

Anyway, back to business. You have just turned to what is probably the most popular part of the magazine (and with a magazine as good as ACAR, that really is saying something). It is the part that addresses the needs of the nation's thousands upon thousands of adventure and role playing gamers. You'd be amazed, as you are reading this now, how many people are stuck in adventure games. I mean just the other day a friend asked me

how to arrest the drunk in *Police Quest I*. *Police Quest I*, can you believe it? The game is almost ten years old!

If you are stuck in an adventure or roleplaying game then you have a number of opportunities. You can write to one of our many Clever Contacts, or you can write to Kerrie about one of the Realm's hint sheets, or you can write to me with your problem. Guaranteed if I cannot help you out, someone else definitely will. Of course you can also write to me with lots of hints and tips, or with your scandalous gossip and rumours (about adventure games, of course), or you can freely advertise your old games here!

The address to write to for adventure hints, tips, problems, chatter, rumors, complaints, etc is: **Adventurers Realm, 12 Bridle Place, Pakenham, Vic 3810.**

Always enclose a stamped addressed envelope when writing to any of the addresses published in this article.

Realm's Really Nice Hint Disks

Big news this month! Graeme Beavan has just put together Hint Disk Volume 3, which is packed with hints for 100 adventure games, including many recent releases, as well as maps for *Elvira*, *Chaos Strikes Back*, *Flashback* and *Simon the Sorcerer* and solutions for *Kings Quest 5 & 6*, *Cruise for a Corpse*, *D/Generation*, *Eco Quest*, *Fascination*, *Inca*, *Bards Tale 3*, *Cadaver*, plus much much more.

Hint Disks Volume 1 & 2 are still available. Combine the three hint disks to cover over 290 different adventure and

roleplaying games. Orders for any of the hint disks are coming in thick and fast, and for good reason of course. Each features a very easy to use interface that allows you to display hints at a click of a button. Packed to the last remaining sector with hints and maps, each disk is priced at an absolute bargain at just \$7 (including p&p) or \$5 if you supply the disk and stamped addressed envelope. To order either disk send a cheque to Michael Spiteri for the required amount to Realm's Hint Disk, 12 Bridle Pl, Pakenham Vic 3810.

Free Hint Sheets

Kerrie, the Lady of the Realm, is eagerly waiting by the mail box with a sudden desire to answer your hint sheets requests, despite the troll roaming around our house chanting love songs about Zork ... "Dungeons are forever!". She can do two things. Chuck the request in the bin if it doesn't contain a stamped addressed envelope, or ideally, fill it up with heaps and heaps of hints for your favourite game. If you would like up to four of the hint sheets listed below then drop a line to Kerrie's Free Hint Sheets, 12 Bridle Place, Pakenham Vic 3810. Please make sure you check the list below before sending in your request.

Hint sheets available are: *Mortville Manor/Maupiti Island*, *Monkey Island I, II*, *Space Quest III, IV*, *Wonderland*, *Leisure Suit Larry 3*, *Champions of Krynn*, *Kings Quest V*, *Pool of Radiance*, *Zak McKracken*, *Zork 1, 2, 3*, *Bards Tale 1, 2, 3*, *Hitchhikers Guide to the Galaxy*, *Guild of Thieves*, *Jinxter*, *The Pawn*, *Corruption*, *Faery Tale*, *Indiana Jones and the Fate of Atlantis*, *Loom*, *Space Quest II*, and the latest 94 Clever Contacts Listing.

Realm's really good hint books

There are two official hint books available. Volume 1 contains hints and tips to over 40 games, and Volume 2 contains hints and tips to over 25 adventure and RPG games as well as pages upon pages of mapping sheets. Volume 1 is only \$9.00 and Volume 2 is only \$10.00. To order either book, drop a line to Gareth Powell Publishing at 21 Darley Road, Randwick, 2031 or ring (02) 398 5111.

Realm's Poetic Trading Post

If you want to buy a game, sell a game, swap a game, give away a game, and NOT pirate a game, then this section is all yours. Instead of the boring old classified ads we usually feature here, I thought I might jazz it up a bit by turning each advert into ... poetry!

Yep, you read right. From this point on, I expect to receive all trading post ads in poetry form, or well, at least rhyme, so as to entertain those who couldn't give a giant pelican what you want to sell. I'll start it off by converting the ads received so far, but for future ads, its up to you.

The address to write to is Realm's Poetic Trading Post, 12 Bridle Place, Pakenham Vic 3810.

There once was a chap called Monte,
Who rather than sit in a tree,
Decided to learn, not C.
But Assembly Language you see.
So if you have a good book on the 68000
Drop a line to Monte Boyd of 52 Sutherland Street,
Cremorne, NSW 2090
While I try to work out why these lines won't
rhyme,
and why this ad has nothing to do with adventure
games. Boom Boom!

This is a story about Nigel Cayzer,
Who abides at 39 Bowtell Ave, Grafton, NSW
2460.
He currently plays with a *Space Legend* Pack,
ho ho,
That contains *Wing Commander*, *Elite*, and
Megatraveller, Yack yack.
And he once enjoyed the *Magic World* games
pack, Yack Yack.
However, he is bored, yack yack.
And would like to swap them for, yack yack.
Syndicate or *Zool 2*, mack mack.

However Nigel's story does not end here,
Now I don't know if he's old enough to drink beer,
But he also has *Buck Rogers*, *Pinball Fantasies*,
Superfighter Pack, and *Heroes Pack*, (I hope I
don't sneeze)
As well as *Sports Pack 92*,
Which he'd like to swap for any decent games,
phew!

Then good ol' Doug Smith, you see,
who lives at Brooms Head, hee hee,
(19 Hibiscus Ave, NSW 2463)
Has a swag of games he would like to divorce,
including *Monkey Island 2*, *Black Crypt*,

Dr Brain, *Heart of China*, *Beholder* and *Hint Book*,
KG and *Lure of the Temptress*, *Camelot*, *Larry*
3,

Maupiti Island, *Wonderland*, and *Putty*,
Not forgetting *Lotus 2*, *Humans*, *Premier 2* and
Shadowgate.

There's more, but wait!

Including *Kings Quest 1*, *Leather Goddesses*,
Last Ninja 3

and last *Chips Challenge*, hee hee.

All between ten bucks and thirty!

So drop Doug a line.

Now there's money that you'd like,
And you've stopped playing *Ultima 1*, *2*, *3*, *4* to
ride your bike,
Then contact Bill Ayre, of 17 Leeding Terrace,
Caloundra,
That's in Qld 2551, tah dahl!

"I want them for my lonely Amiga 500" Bill sings,
and you can call him on (074)913464 in the eve-
nings.

Darren Chapman, of 1a Warden Road,
That's the address in Belrose, NSW 2085, of his
abode,
He'll sell his *A-Train* for just fifty big ones, if a bit
late,
Or exchange, he will, for *Superfrog* or *Flashback*
or *Syndicate*.
Ring him, if you want, on (02) 451 9497.

Then we have Graham Hockey, a chap from 13
Forest Court, Tura Beach, NSW 2548,
He has *Robin Hood - Conquest of Longbow* for
twenty five smackers,
And its hint book for seven dollars, as well as
Monkey Island 2 for also 25 smackers.
The fifteen smackers will buy you *Space Quest*
II, or *Rise of the Dragon*,
Of course, you can have that last game's hint
book for eight,
And even purchase *Kings Quest 5* for \$25 if you
don't wait.
Then there is *Eye of the Beholder 1* for \$25 and
hint book for \$10,
And *Manhunter 2* for \$15 and for a bargain,
Arazok's Tomb for \$5 - quick grab a pen,
Or lash out and get the lot for a special musical
price of \$140.
Drop Graham a line or ring him on (064)959727.

Alas there is also Robert Brynes,
At PO Box 8, Sydney, 2001 he yearns,
It's money he'll pay for *Pools of Darkness*, *Silver*
Blades, we hear,
and *Champions of Krynn*, *Dark Queen of Krynn*,
and *Treasures of the Savage Frontier*
Only for the Amiga, of course,
and he will also sell for \$20 each
Drakhen and *Robin Hood*, ah life's a beach!
Ring him on (02) 213 2157.

31 Henderson Road, Everton Hills Qld 4053 is
the address of Cameron Rose,
And for a quick contact ring him on (07) 353
2432, on the nose,

He's in the market for *Battletech*, or he'll swap it
with
Barbarian 2 (by Psygnosis), *Defender of the*
Crown, *Kick Off*,
FA18 Interceptor, *Wings of Death*, *Indy and the*
Last Crusade,
Of which he'll also sell for just \$20 each,
And he'll sell the *Wheels of Fire* pack for just
\$40, what a peach!

"To the Lord and Lady of the Realm", writes Ian
Mitselburg,
Who resides in a castle at 3/12 Avona Avenue,
Glebe NSW 2037.

A flattering letter he wrote did he,
"The Realm is great, brilliant etc ..." he said to
me,

As he advertised these games ...
Elvira + hint book, *Hero Quest*, *Stargliders 1 & 2*,
Damocles, *Dungeon Master*, *Jewels of Darkness*,
to swap for *Fate of Atlantis*, *Syndicate*, *Civiliza-*
tion AGA, *Sim Life* AGA, *Dune 2*, or similar,
So ring this nice chap on (02) 660 6519.

Of 14 Bourne Street in Tamworth,
That's in NSW 2340, lives Neil Judge, and he's
no smurf,
He too would gladly give his money, if you like,
For *Pools of Darkness* and *Dragon Strike*.
Of course, you can ring him on (067) 621 899.

As you see I have gone to pretty nasty
lengths make these ads rhyme. There will
be more of this putrid poetry next month,
unless you can do better.

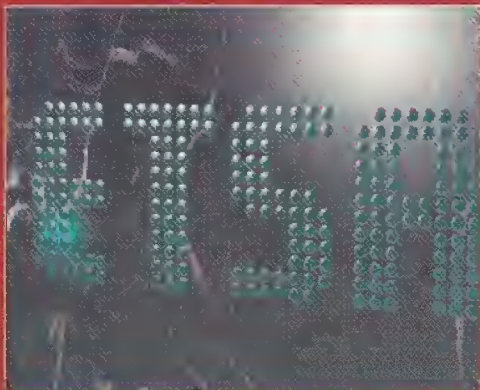
Adventure Chat

Regular Realmer Doug Smith writes ...
"When I wrote to you last, I attributed the
game *Fools Errand* to someone other than
its real author, Cliff Johnston. Sorry about
that. I'd like to hear of any other games
by this ingenious bloke. I'd also like to
find out what Icon Simulations got up to
after they finished *The Uninvited*,
Shadowgate and *Deja Vu* games. I image
they went solely PC. *Shadowgate* was the
first adventure game I played and I've
found no computer game that equaled the
fun I got from it. Like *Dungeonmaster*
and a few others, it created a fascinating
world that you could immerse yourself in
because its logic was consistent and be-
lievable."

Mike: Thanks for your comments.
Please write in if you can help Doug with
his queries, and I'd also be interested in
finding out people's favourite games, and
even the first adventure game you played.

continued on page 72

Amiga ART



► 736 x 580, rendered in scanline mode in Imagine 2.0 by David Sloan.



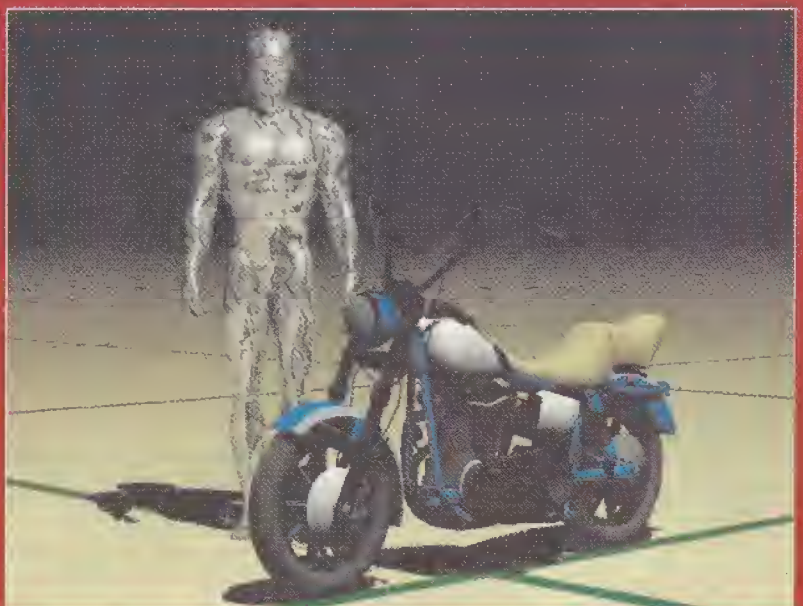
► 736 x 580, raytraced in Imagine 2.9 by David Sloan.



► 352 x 566, ray trace.



► 640 x 512, ray traced.



► 736 x 576, rendered in Imagine 2.0 by David Sloan. Humanoid object from Crestline, Harley motorcycle from Imagination Works.

GALLERY

Amiga users are a talented bunch. In this regular spread of graphics created by people like you, we'll be showing the best images from around the country. So, if you've got something to contribute, why not shoot us a disk - or modem the file to our simple BBS on (02) 816 4714.

(please include your name, tel no and how you created the image)

BTW: Like much of Amiga review, this two page spread was desktop published using Professional Page 4.1 on an '030 Amiga.



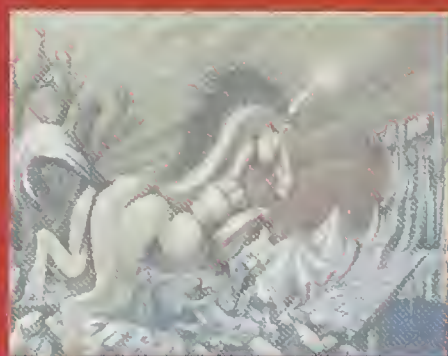
► 368 x 482, by Randy R. Wall, ray traced in Imagine 2.0.



► 736 x 576, rendered in scanline mode in Imagine 2.0 and using Essence bump textures and varyRGB to slightly vary the skin colour - by David Sloan.



► 768 x 564, background image generated in Vista Pro, Battlemechs and the ship by David Sloan.



► 320 x 256, EHB, hand drawn.



► 736 x 576, ray traced in Imagine 2.0. The Wonder Wall is based on a Syd Mead design done for the American Playboy magazine in the late 70's.

Clever Contacts

Existing Clever Contact George Mahera of PO Box 272 Menai, NSW 2234 would like to extend his services by inviting Realmers to log onto his adventure bulletin board. It is basically an on-line help service that provides hints, tips and solutions to adventure and roleplaying games, as well as providing a chat and trading post service. The BBS is called Realms of Fantasy and the number is (02) 543 0395. It is available 24 hours a day/7 days a week.

Another Clever Contact offering an electronic service is Super Adventurer Hint Collector Graeme Beavan, PO Box 254 Wyong, NSW 2259. Graeme doesn't actually have a BBS, but if you ring him on (043) 511 746, he'll transmit any hints you want. Ring him first though. As well as having hints for heaps of adventure and roleplaying games, Graeme will also be a Clever Contact in particular for *Gobliins 1 & 2*, *Might & Magic 2 & 3*, *Curse of Enchantia*, *Elvira*, *Black Crypt*, *Fate of Atlantis*, *Lure of the Temptress*, *Monkey Island 1 & 2*, *Eye of the Beholder 1 & 2*, *Hook*, and *Simon the Sorcerer*.

Tasmania gains another Clever Contact! Existing contact Chris Stratton of 220A Best St, Devonport, Tas 7310 can help out with *Kings Quest 1-4*, *Larry 1-3*, *Space Quest 1-3*, *Monkey Island 1 & 2*, *Fate of Atlantis*, *Lure of the Temptress*, *Eye of the Beholder 1 & 2* (no maps), *Operation Stealth*, and *Loom*.

Michael Seymour of Downstairs, 23 Cliff St, Mt Stuart in Tasmania 7000, wrote me a wacky letter offering his services in hints, tips, cheats, solutions and lots of other goodies for games such as *Zool*, *Whiz Kid*, *Flashback*, *Lost Vikings*, plus more. Michael is even putting together a hint disk which he'll sell for one lousy dollar, plus free photocopying. Whattaguy!

Many thanks to all our Clever Contacts for providing such a valuable service. If you'd like a list of Clever Contacts, drop to a line to Kerrie in the hint sheet department.

The Adventure Problem Centre

This is the part of the Realm where problems and solutions abound. So if you were stuck a few months back, keep your eyes peeled here.

Joseph Elwee back in January was stuck in *Elvira*. Graeme Beavan says you don't need to open the upstairs bedroom door to finish the game and the key to open the gate under the water is located inside a coffin in the catacombs. As for the bucket - well, what bucket are you talking about - Graeme can't seem to find one. Detailed hints for *Elvira* and *Cadaver* can be found on Realm's Hint Disk 3.

Doug Smith appears to be stuck in *KGB* ... "I've been killed or maimed in so many vicious ways that I'm thinking of joining MBF, but I still can't get Rita to let me out of the room in Chapter One. They apparently plan to squeeze my eyeballs out of their sockets and hang my remains from a meathook in the coldroom. To avoid this I think I've done everything the guide (in ACAR a few months back) says, including dumping the cocaine and protecting her from the America."

Mike: *KGB* sounds like a pretty horrible of game, a kind of Adventure Nasty. Someone rescue Doug please!

Maree Reynolds of Noble Park is a Regular Realmer of years back (when the Realm was just a baby article). Despite her overwhelming adventure playing experience, she does occasionally get quite stuck. Maree writes ... "We have recently started playing an old adventure game called *The Jetsons* and we are stuck. We have our credit card and some items from the Mega Hall. We have reached Robotopia and entered the Reception area of the resort. We have been given a lamp from the Archaeologist and have been to the pool. That is about all. Any help in this very frustrating game would be very much appreciated."

Can anyone help Maree and her buddies? Maree was also stuck in the classic *Lords of Time*, in particular getting around in the dark. My advice there is to use an alternative light source, such as a firefly. You can get one off the Tooth Fairy (accept her second offer!). Eating mushrooms might be of benefit to reach her.

Hints

Next month readers are in for a treat with the first Adventurers Realm Super Hints Special, featuring swags and swags of hints and tips for your favourite Amiga and C64 adventure games. Let's get started on a few to whet your appetite ...

Battletech - In the final training mission you'll have a strange feeling. At this point you can get out of the city which the Mech you were using for your training mission. Run immediately north, then go west into the maze of buildings. The exit is northwest past a small pond of water.

The cache is located in a southeasterly direction from the inventor's hut. On all versions except the C64, the cave will be located on a small island just off the mainland. On the C64 the cave is near the water on the mainland. As you're heading south along the shore, be sure to keep taking an overhead view to help you locate the cave.

Lure of the Temptress - To escape from the cell, take the torch from the wall and light the straw. When the Skori guard enters, you can exit through the open door. Once outside, close the door and lock it.

Mallin is the guy to talk to obtain a handy metal bar which you should take to the shopkeeper for a nice reward. If opening gates seem a problem, have a chat to Goewin and she'll do the work for you.

If you make it to the dragon, use the potion (made from herbs, the recipe from the monks) on the beast and you'll get an important item.

Rise of the Dragon - Put on some clothes and a trench coat to prevent being arrested outside your apartment. You'll have to remove your trench coat to wear the bullet proof vest.

To open the safe you need to have the gun permit number and ID number from Chen Lu's Vid-Phone. Look at the four numbers that are common to the two.

To prevent being electrocuted make sure the alligator clips are hooked up correctly. If the clip is close to any terminal other than the one you want ... zappo.

- PCM -

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Bit of background here. Assassins were so called because they were drugged up to their eyeballs with hashish so that they thought that if they were killed they went straight to paradise. In this game, part of a three game pack, the assassin has a scimitar and enough muscles to provide one and half Arnold Schwarzeneggers. This assassin is seriously muscle bound.

The opening sequences are good with excellent music by Alistair Brimble. To depress you as you start you see this honour role of humungous scores with David Broadhurst at the top which is no surprise because he wrote much of the game.

When you start as a rookie you should take every easy option and make everything as simple as possible. The screen tells you that your first mission is to locate the entrance to the secret lair and, surprise, surprise, expect heavy resistance. "Advise maximum use of available force."

You are dropped in by chopper. Although the sky is blue there is a wind whistling around you. Almost immediately you are attacked by a dog which is not friendly and not to put too fine a point on it, is intent on chewing on your family jewels until you die. Once he sinks his fangs into that delicate and ill-protected area you are a goner. The trick is to leap over the dogs as they come to attack you. Although you are an assassin the only weapon you have is a small boomerang - an Australian assassin? - and I can tell

you from bitter experience that a small boomerang is of little use when a mad dog has the teeth firmly sunk into your goolies. If you drop into the nearby pit to avoid the dog you are spiked to death by stalagmites which might me thought of as haemorrhoid deterrents. Avoid these like the plague. Instead, jump high and avoid canine confrontation.

There are other traps but you can avoid these by climbing trees. As you run, jump, climb, twist and turn to avoid the testicle tasting terriers you score points.

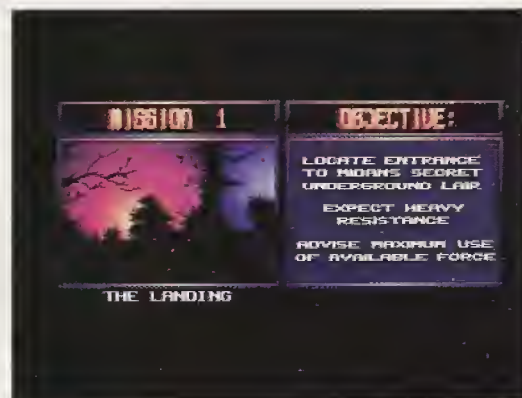
There are some nice touches like small clouds of dust when you run and when you jam on the brakes. But the game is basically about timing. You have to jump precisely high enough and far enough so that you are not rendered into a soprano by one of our testicle chewing dumb friends but at the same time you have to acquire points and you simply must find the entrance. It gives you some idea of my skills in this game that the rank I reached was "dinner lady". And I still have a nasty pain in my groin when I think of those dogs.

The other two games in the pack are *Superfrog*, which we reviewed in the September 1993 issue, and *Shadowlands* which is called a novella. This word means somewhere between a short story and a full length novel which is intriguing. Although this is not a new game we will give it a whirl and review it in the future.

GARETH POWELL



Ratings	
Graphics:	75%
Sound:	80%
Gameplay:	78%
Overall:	80%
Amiga Games Pack contains	
Assassin, Shadowlands & Superfrog	
Distributed by	
Hotpoint (02) 634 6499	
RRP \$89.95	





CANNON FODDER

Military school has ended and training is complete as 15 raw recruits eagerly await orders of their first deadly mission. Two men are selected, then it's a short Chopper ride to the first "Theatre of Operations" located in the dense jungle.

The first mission is a simple one where you learn to control your troops. You simply have to kill all three enemy soldiers. With a few clicks of the mouse, I cut down the enemy with a blaze of machine gun fire and the battle is quickly won.

The second mission is split into two phases and provides the first real test in battle. The first objective is to kill all enemy, and in the second phase you must also destroy enemy headquarters. My troops are going exceptionally well as they sweep across the countryside, but a lone sniper attacks the party from behind, and one of my troops is lost in the battle.

My last remaining troops continue on to finish the mission in honour of their lost comrade and take their revenge on the enemy H.Q. Mission complete and now it's off to the Antarctic wastes.

The guys at Sensible Software have done

a fantastic job with this game. The background sound certainly creates the right atmosphere. Most of you will know what I mean if you've ever played *Sensible Soccer*. The graphics are quite good and there are lots of missions to make this game very enjoyable. The opening title song with digitized speech is a real treat.

The game is entirely mouse driven. Click the left button anywhere in the main screen and your troops will move to that point. A click with the right button turns the pointer into a cross hair, aim this at the enemy and hold down the button to shoot. To throw a grenade or to launch a bazooka shell, you simply click and hold down the right button and press the left.

The main part of the screen shows the action area and there are several icons down the left side of the screen. There is a map icon in the bottom left of the screen, and if you click on this, you can view the map for the whole area along with your current location. The names of your current team are located on the top left of the screen and it's here that you can click on them to split the team into several groups, which is essential in some missions. Then, as you control

one team, the other will automatically defend themselves.

360 eager conscripts are waiting to go to war. 15 new recruits arrive after each of the 24 missions which are split up to a maximum of six phases. The missions and terrain will vary from the dense jungle, the Arctic wastes, the arid Desert, the Moorlands and an Underground Base. Keep an eye out for the hidden booby traps on some missions and also watch out for the quicksand as there are no warning signs.

There are also a range of weapons and vehicles available, and pretty soon you'll be whizzing around in jeeps, skidoos, and tanks, and you'll also get to fly in some choppers. My favourite thing is to use a vehicle to run over and squash the enemy. Well, the mission objective never tells you exactly how to kill the enemy, so why not have some fun along the way.

This game will provide you with many hours of entertainment. The title song at the beginning of the game sums it all up when it says, "War has never been so much fun".

GRAHAM BEAVAN

Ratings

Graphics:	89%
Sound:	88%
Gameplay:	91%
Overall:	90%

Distributed by Sega Ozisoft
(02) 317 0000
RRP \$49.95



TOR/ADO

It is not for me to make a connection but my bank manager is most seriously into flight simulators. He plays them during his lunch hour. And, perhaps I am the wrong person to review a flight simulator game because I find that they are, rather like my bank manager, long, unexciting and somewhat boring. But, but, but - so complex and clever have these flight simulators become that they are actually used in pilot training.

The daddy of all flight sims is *Flight Simulator* which is published by Microsoft. This one program has spawned a whole mini-software industry and you can now get extra disks so that, for example, you can fly in and out of all the major airfields of Australia. You would only want to do this if you were mad keen on aircraft or a qualified pilot who wanted to brush up on technique. But that the possibility exists shows how popular these flight sims are. There are several Qantas pilots who use the Microsoft *Flight Simulator* most seriously.

Tornado is a flight simulator based on a fighter plane which uniquely has swing

wings which are retracted when flying at high speed but give more control and stability at low speeds. The simulation of the cockpit is excellent and there is even, as in the actual aircraft, a head up display so that when you are in combat you do not need to look down to see the instruments.

This program totally abides by the rules. That is the plane, as near as possible, flies and handles like a *Tornado* and has all the proper limitations of fuel load, stalling speed, turn rate and what have you as does the real thing. While you are in the cockpit all is well because the instruments are realistically rendered. But the scenery is blocky

Ratings	
Graphics:	75%
Sound:	80%
Gameplay:	78%
Overall:	80%
Distributed by	
Hotpoint (02) 634 6499	
RRP \$79.95	

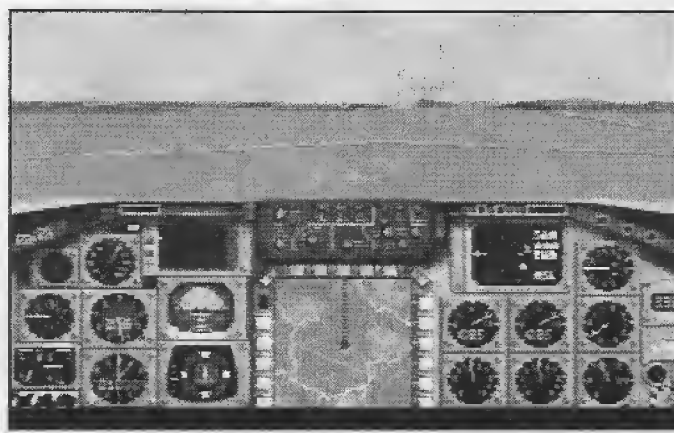
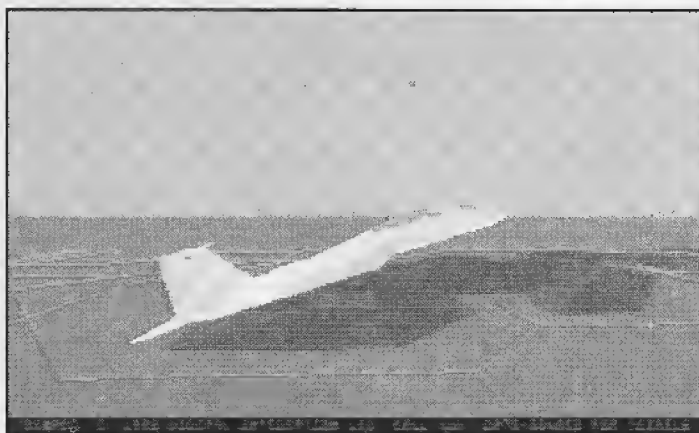
and the other aircraft and vehicles shown in the game are not in the same class as in, say, *Flight Simulator* on the PC.

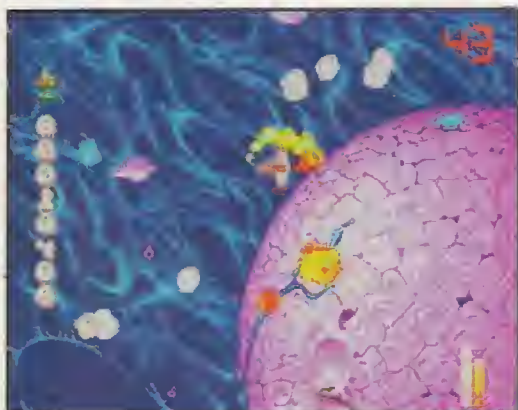
This may be because the Amiga I was using was pretty bog standard and I was running from floppy disks. If you were running with, say, an Amiga 4000 with a fast hard disk and a graphics accelerator it is possible everything would move more smoothly. But the scenery would still not have the graphic detail which I consider essential.

Interesting that for the PC version the base entry model recommended is a 486 running at 33 megahertz so maybe you need a powerful machine to do this program justice. Maybe.

For me it was as exciting as watching paint dry or grass grow. Look, I could well be wrong. Flight sim fanatics may well leap on this program with cries of glee. Me, I'll give it a miss and go back to zapping the aliens from my spaceship that never runs out of fuel or ammo.

GARETH POWELL





When the AGA machines, the A1200 and A4000, first came out we were assured that a veritable flood of AGA-specific games would follow them, taking advantage of the new chipset's improvements in speed and colour. Indeed, we've seen a few.

But in the hands of someone who really knows how to make it sit up and beg, the old Enhanced Chip Set (ECS) base level machines can still play with the big boys in the games department - miserable old 68000 and all! If you're looking for a reason not to flog off the old A500 for what you can get, *Stardust* may well be it.

One of the best ways to make a great game - if you're not blessed with a great deal of imagination - is to take a couple of really old concepts and do a massive crank, chop and lower job on them. And concepts don't come much older than *Asteroids*.

Little ship shoots big rocks. Big rocks become smaller rocks. Rocks eventually get blown away completely. Dangerous flying saucers appear and shoot back. Thus runs the basic plot of *Asteroids*, and it's one of the cornerstones of computer gaming, with uncountable imitators.

But what if you took *Asteroids* and gave it REALLY REALLY funky graphics. We're talking rendered, lightsourced, tumbling rocks in different colours here. A psychedelic outer space background that'd give Tim Leary a headache. Make sure to provide silky smooth animation.

Now take the ship and turn it from an anonymous triangle into a vicious little blaster with three different weapons and a shield (forget hyperspace, it's been done).

And flick the flying saucers - let's have lots of different types of bad guys, and, of course, bosses at the ends of levels.

Add a pumping techno soundtrack.

Now hijack your second concept. Take another old game, this time *Star Wars*, and nick the fly down the trench bit. Tweak it into a non-vector 3-D down the tunnel obstacle avoiding rock blasting dead manic alternate level. Ensure WOMPtisha WOMPtisha soundtrack is maintained smoothly at all times.

Shazam! You've got *Stardust*, a game that's taken Europe by storm and will do the same here.

You, the usual Saver Of The Universe, have three guns and a shield. The shield

doesn't last forever, but you can shoot as much as you like. In other words, never stop. You have a plasma gun which gives a lot of punch in a straight line but little coverage, a three way shot with less power but more spread, and a flame thrower with limited range but considerable poke. When you wipe out rocks and bad guys you get bonuses, which slowly cycle through several possible values. Getting a G bonus beefs up your currently selected gun.

There are three flavours of asteroids, which vary in toughness and danger to your person. You can fudge along by simply winding up the shield every time you drift into a rock, but the Magic Death Postponer doesn't last forever and you will eventually have to learn to steer.

Naturally, bad guys come in various flavours. Some shoot, some merely mob you. None appear to be aware of the Prime Directive.

And after pulping a few levels (you have some degree of choice over which order you visit them in), there's a Big Dude who takes rather more damage. Revolutionary.

The tunnel sections are brilliant, if a little confusing. The ubiquitous rocks tumble at you, scaling perfectly as they come, and with them come various other things, like the unshootable mines and essential shield bonuses. Again, never stop shooting, but take the time to admire the multitude of images for your ship in the foreground - it never gets that cardboard cutout look as you move it.

Stardust's plot depth is approximately zero, and it's not very inventive. But who cares? It's fast, it's gorgeous - if you tell someone that *Stardust's* an AGA game, they'll believe you - and it is really one hell of a lot of fun. If you want the absolute gold-plated front-running total show off super blast up of the year, this is it. Five stars in all important departments - buy it now!

DANIEL RUTTER

Ratings

Graphics:	95%
Sound:	90%
Gameplay:	95%
Overall:	95%

Distributed by:

Hotpoint (02) 634 6499
RRP \$79.95



The start of *Disposable Hero* is quite enjoyably realistic. The screen is running with a series of security messages which tell you that headquarters is under attack and you had better take you finger out or this will be the end of what little civilisation is left. You are warned that you are in state Alpha Red (in the real world that would be Alfa Red but let us not be picky) which is amplified by the sound of what appears to a space age police car whining its way into the distance.

Then come the credits. This is a most splendidly named "Boy Without Brains"

production. The game is accurately called *Disposable Hero* - this title seems to suggest that if you are not very careful you will get yours early in the piece. The suggestion is not misleading.

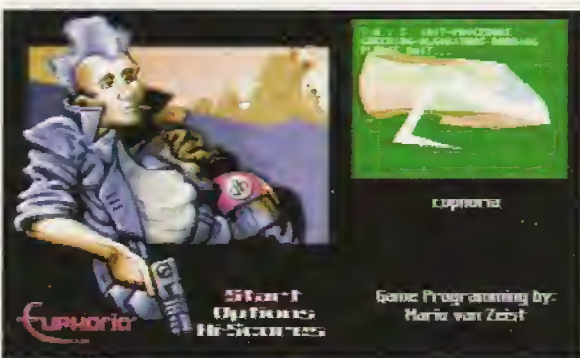
Basically the situation is that we are in the year 2867 and things are pretty lousy. Indeed, worse. We don't even have a crop-haired Sigourney Weaver to help.

We are the last of a resistance movement which is trying to save the earth and humanity. We are the D-Force and we have been warned that our headquarters are under attack and we are to fight for our existence. All of this to a background of excellent music which we might categorise as light metal rock.

Your jet plane comes out of an underground garage and you're ready to go to war.

Then comes one of these incredibly daft anti-piracy systems which most seriously turn me off. If you wear glasses or if you are in a darkened room you have Buckley's chance of working out the code wheel, nutting out the right image, nutting out the right number and then entering it. These anti-piracy precautions ruin a good game and there simply has to be a better way.

The game is basically a shoot-em-up but the creators of the game have really bothered to create some distinctive



Ratings

Graphics:	75%
Sound:	80%
Gameplay:	78%
Overall:	80%

Distributed by
Hotpoint (02) 634 6499
RRP \$69.95



and worthwhile enemies who look as if they were all spawned by the Battleship Galactica. Lots of style. Lots of detail. Great graphics.

Your ship has a small gun which hurls a nonstop withering fire as you head towards the enemy. The idea is that you ease your way through the attackers, zapping as many as you can on the way, and then enter a factory where you steal blueprints for a more powerful battleship.

Steal enough blue-prints and you can add extra power to your ship. You could select the ability to shoot three ways at once or add an extra missile launcher or any combination that fits within the power limits that you have earned.

Armed to the teeth and boosted you sally forth. I choose to shoot two ways and have a missile launcher and I am invincible, d'you hear, invincible. That is until I meet this armoured monster that has a grenade launcher built into his head and a Maxim machine gun firing rockets in his navel. He zaps me between the eyes just as I am about to launch a missile.

Yes, this is a basic shoot-'em-up and, yes, your success depends much on your skill with the joystick. But I enjoyed it. Enjoyed it a lot. Much of the enjoyment has to do with the excellent and imaginative graphics. And much has to do with the music sound track. Recommended.

GARETH POWELL



At last it has happened. With Microcosm somebody has made a game that uses the full power of the CD-Rom. Before we start I want everyone to understand that I have not yet played this game. I have seen the demo disk and played a small portion of the game. A full review as and when it comes in to our hands.

But the demonstration disk is so impressive it takes the breath away.

This is as near true movie animation as I have seen and while there is no doubt some improvements can be made, this program, as it stands, is the definitive statement of how games will look in the future.

The authors have, with gay abandon, stolen from almost every scenario and game and movie ever written. My own count included *RoboCop*, *Top Gun*, *Star Wars*, *The Return of the Jedi* and *The Fantastic Voyage* and there may well be many more.

This matters not. The detail is staggering. In part of the game you are in a shuttle hurtling through the human body - my guess is that they are arteries but the colouring on my screen suggested that we were in a more fundamental

part of the body - with baddies, bacteria and viruses coming towards you in droves.

In a sense you are flying down the canyon of buildings in *Star Wars*. Back on deck you see characters like RoboCop wandering around and the Bodor Daily News, not a newspaper on which I would choose to work, brings us up-to-date on what is happening.

Space ships, firmly based on autogyros, come in to land and helicopters, futuristic helicopters, take off and land.

The screen is artificially framed in a letterbox shape and this may be because the graphics require so damn much computing power or because the designers want to give the impression that you are at the movies. I lean towards the former theory.

This is the most amazing demo I have ever seen of any game on computers and it is, true, quite astounding, near movie animation. It is as realistic as you can get.

Any drawbacks?

The price, matey, the price. At \$130 this costs twice as much as most games. On the other hand, this is the first serious breakthrough in CD-Rom games. If you want to be a pioneer it is going to cost you. For the future Microcosm is the standard by which all other games will be judged. It is the start of a gaming revolution.

GARETH POWELL

Ratings

DEMO GAME ONLY

Distributed by
Hotpoint (02) 634 6499
RRP \$129.95





Programmers working with CD-Rom disks are starting to stretch their wings and fly. They are beginning to understand that with 500 megabytes or so of space to play with they can add visual effects that are considerably in advance of those found on normal disk based-games.

Fly Harder from Star Byte software is an interim step. It has sound - for once the voice is not overly American, more mid-Pacific - and the details in the graphics are of a remarkably high standard. The scenario is relatively simple and we have seen variations of this before. The date is April 6 2103 and we are heading home from Delta Thau in our battleship Irata. We will refuel at Zarkow which is the mid-point of our journey. As we approach Zarkow we find that the evil Thargoid empire has conquered the planet and set up eight reactors. Even in those future times reactors are a no-no and unacceptable to greenies and, to Nokdar, the captain of the battleship Irata.

Our brave captain decides to send down five shuttles with the idea that they should zap the reactors out of existence by bombing them. Plainly Nokdar is not a paid up member of Greenpeace because he must know that by treating reactors in such a cavalier fashion he is going to make Zarkow into a sterile and lifeless rock with no possibility of rehabilitation for, say, 2000 years. But, hey, Nokdar is the captain and who are we pilots to argue.

You head for the planet in a shuttle, pick up a charged sphere - something like a ball bearing, drop it on the reactor and then get the hell out of there before the fallout fries you.

None of this is, believe me, easy. That is because the game's programmers with evil intent have changed the laws of gravity and put strong magnetic attraction impulses around

anything that is likely to zap you. Thus you can crash upwards and downwards. I did both - frequently. To add to the excitement the enemy has sent up what look like aerial floats for the Mardi Gras parade and if you hit one of these, once again ... blooie. So you are trying to pick up a sphere, fighting magnetic attractions that will have you crash, nipping around these aerial Mardi Gras thingies and trying to position yourself so that you can drop the sphere on the reactor.

And this is but the first level. (Did I mention that some Dalek refugees from Doctor Who are parading the ground shooting at you at random intervals? Ho, yes. This is not easy, peasy, lemon squeezy time.)

When you get to the next level you have a laser gun zapping a googol - the largest number known to science - of volts across the sky and you have to try and nip through in the spaces in between. Lots of luck, Charlie.

And so it goes on. This is a standard space manoeuvring game but with some added excitement because the scenery is so detailed and the obstacles so intelligently challenging. But it could still be a disk game. Some attempt has been made to maximise the space available on a CD-Rom disk. But not enough. That is still to come.

GARETH POWELL

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Ratings

Graphics:	82%
Sound:	70%
Gameplay:	75%
Overall:	75%

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